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STATUTORY ENQUIRY—1926

STEEL INDUSTRY

VOLUME III

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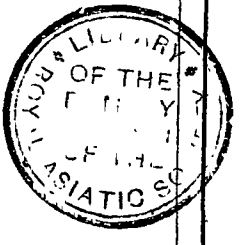
The Oral Evidence given by the Tata Iron and Steel Company, Limited, before the Indian Tariff Board



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THE TATA IRON AND STEEL COMPANY, LIMITED.

Evidence of Mr. J. C. K. PETERSON, C.I.E., and Mr. C. A. ALEXANDER, recorded at Shillong on Monday, the 14th June 1926.

How protection has worked.

President.—Mr. Peterson, this morning I thought I would start with a sort of short review of the scheme of protection, but I find that the figures are not really in order. However, I will give you an idea of the kind of figures that we want you to give us. There are, I think, two points on which we want to examine you at this stage. The first point is how far you are able to show that you are approaching the stage when you can do without protection. For that purpose I think that we will have to take the average works cost of all steel. By all steel I mean typical steel such as rails and structurals. These two classes I think may be taken as representing all steel. It is no use bringing in sheet bars, galvanized sheets, etc.

Mr. Peterson.—I suggest that instead of rails and structurals you take rails and bars.

President.—Whichever you suggest represents all steel, I am prepared to take.

Mr. Peterson.—I think that rails would represent the big purchases made by Government and that bars would represent the ordinary purchases by the Indian market.

President.—Besides, these are typical steel products.

Dr. Matthai.—How do these compare with the total production?

Mr. Peterson.—Rails and bars come to about two-thirds of the total production.

President.—I would take it like this—

Old rail. } Average.
Old bar. }

Old rail. } Average.
New rail. }

Old bar. } Average.
New bar. }

New rail. } Average.
New bar. }

New and old bar and rail mills.—Average.

I think that it is better to take the above groups. Then you work out your average works cost for 1921-22.

Mr. Peterson.—For those groups only?

President.—For 1921-22 we took the average for products of the old rail and bar mills as Rs. 120·41. That may be taken as correct?

Mr. Peterson.—Yes. Do you want it year by year?

President.—Yes, up to 1925-26. I think that, as you are preparing the table, you might also give us some figures for 1926-27 and 1927-28.

Dr. Matthai.—That covers structurals, I take it.

Mr. Peterson.—Yes.

President.—Formerly also we included them.

Mr. Peterson.—Figures for 1921-22 you have already got.

President.—96,000 tons rails. 30,000 tons bars. Average cost per ton—Rs. 120·41 for 1921-22.

Mr. Peterson.—You want actuals for 1922-23, 1923-24, 1924-25 and 1925-26 and estimates for 1926-27 and 1927-28.

President.—Yes. The year 1927-28 will be the first year under the new scheme.

Mr. Peterson.—I will have that statement ready to-morrow.

President.—Another point arises in this connection. The last time we had in mind the whole industry. As a matter of fact the report was based on your own conditions. Now I think that it would be necessary to eliminate your own special conditions, so that we may be able to see how the new-comer is to realise his prices. As regards the same groups, I want the average prices realised during the same period, but please separate the prices realised under contract from those realised outside the contracts.

Mr. Peterson.—You don't want contract prices.

President.—No, but if you could give them without much trouble we would like to have them for this reason—to see whether you have lost or gained by contracts.

Mr. Peterson.—We can give you those figures. But one of the difficulties would be this that rails are all supplied under contract sales.

President.—I think it would be much better to have your contract price. You may also have sold some outside the contract.

Mr. Peterson.—Practically none. I don't think that rails are sold in any large quantities outside the contract.

Mr. Alexander.—We may have sold a few tons of rails outside the contract.

President.—Would that affect the average price which is the important thing?

Mr. Alexander.—Any sales effected outside the contract would not affect the price.

President.—Did you?

Mr. Peterson.—No. Government had the first call on rails.

President.—I think it would have been important if you had sold any rails outside the contracts.

Mr. Peterson.—Unfortunately we could not do that. When control was taken off in 1919, it was taken off by the Railway Board on the condition that they should allocate our rail production against various contracts. That was the condition and they proceeded to do so. Consequently, we had no spare rails to sell. In 1921, the Government altered the contract price in our favour. In the case of other classes of steel, they would not come under contract, but rails would be entirely under contracts.

President.—Some of the other classes of steel also would come under contract.

Mr. Peterson.—Very little. In 1921, we made an arrangement with the Government, that is with the Railway Board, that if the Railway Board's

prices were increased, as we suggested, for rails, we would give a special discount on all other kinds of steel required by them.

President.—Discount on the market price?

Mr. Peterson.—It was Rs. 7-8-0 per ton. We can of course give c.i.f. prices for rails.

President.—Don't mix them up.

Mr. Peterson.—You simply want our realised prices.

President.—Yes, to see how nearly you got to the c.i.f. prices.

How much benefit the Tata Iron and Steel Company have obtained.

President.—The next point in connection with the examination of the scheme is to determine how much you benefited by the protection that you got. There is one difficulty that I think we ought to clear up. The scheme really came into operation about the end of June—that is a very awkward date—and up to now we have followed up from that date. What I would like you to do now is to begin from the first of April 1924, and then go on to the end of the year.

Mr. Peterson.—31st December 1924, or 31st March 1925?

President.—Up to 31st March 1925. Part of that period comes under the bounty scheme, that is from October 1924 to March 1925, and we would like you to separate the two periods for the 1st year as bounty period and non-bounty period.

Mr. Peterson.—We can give it in periods of six months if you want.

President.—If you give in six monthly periods, it will be difficult to get an idea.

Mr. Peterson.—The simplest way to get it is to give our monthly profits.

President.—In that case you cannot take the works cost by months. You will have to give your works cost. You will have to give your realised prices and then you will add the bounty. Then you ought to have Rs. 57 over the works cost, under the original scheme. I want to see how that comes out.

Mr. Peterson.—Do you want it for those groups or for the whole steel?

President.—For the whole steel—bars, structurals, plates, light rails, heavy rails, etc. As regards tin-plate bar I do not know what to do because there is no realised price.

Mr. Peterson.—For the purpose of that, take our figure.

President.—I don't want to be bothered with profit and loss on that account. You put tin bar at the end and then we will consider whether we ought to exclude tin bar altogether or not. You had better give it at the end.

Mr. Peterson.—I can give you the realised price as we understand it.

President.—I don't want that because it may not be as we understand it.

Mr. Peterson.—I cannot give you any price.

President.—Give it separately at the end of each year.

Mr. Peterson.—We shall give the price that we were actually paid but there are some outstandings which we claim and which they have not paid.

President.—Give only the provisional price.

Mr. Peterson.—You want these made up for each class of steel.

President.—Yes. Then, you will give the works cost, production and the surplus that was expected.

Mr. Peterson.—That would give the average cost of steel for each class of steel, production of steel, realised price, the bounty and the final realised price including the bounty, will that do?

President.—You will also show the surplus over the works cost.

Mr. Peterson.—Theoretically you want the profit per ton.

President.—Per ton and the total.

Mr. Peterson.—Yes, but it will take some time.

President.—We want to see how the scheme has worked. You distribute the bounty over the whole steel.

Mr. Peterson.—Yes.

President.—I think that as regards the case of tin bar you had better exclude that from the bounty altogether.

Mr. Peterson.—Shall we show rail bounty separately or in the realised price?

President.—Realised price *plus* two bounties in the case of rails.

Mr. Peterson.—Yes.

President.—I think in the case of tin bar we should exclude the bounty altogether.

Mr. Peterson.—I follow. I shall distribute the bounty over the rest of the steel.

President.—So far as 1926 is concerned . . . . . .

Mr. Alexander.—I brought with me this year's figures for April and May.

Mr. Peterson.—You want actuals for 1924-25, and 1925-26 and estimates for 1926-27.

President.—Yes. That of course you will base now on the works costs that you are preparing.

Mr. Peterson.—Yes. We will base that on the gross tonnage we expect to produce in 1926-27 and we will work it out from that in the same way as we did for 1927-28 (page 22 of Representation*).

President.—You would be able to give us the average for all steel, would you not?

Mr. Peterson.—Yes, but it may take some time to work it out.

President.—You can have time. You will be examined on this later. You see, I am not really able to follow your arguments in the representation on this point.

Mr. Peterson.—My argument is really based on the Profit and Loss statement.

President.—If you were to get Rs. 180, your surplus would have been tremendous. Rs. 57 *plus* works cost, that is really the basis now. It is no use talking of the Rs. 180 that you might have got.

Mr. Peterson.—Yes, but that is our argument.

President.—When you have prepared that statement will you please show it to me before submitting it officially?

Mr. Peterson.—Yes.

Dr. Matthai.—It might be useful if you could add April and May 1925 to your statement of orders booked and give us the total tonnage just to make it conform to the financial year.

Mr. Peterson.—We will do that for you.

Whether the Tata Iron and Steel Company have reaped full benefit.

President.—In this connection one point arises and that is this. The causes which prevented you from realizing these prices are, I think, the double rise in the exchange—I mean in the rupee exchange and the Sterling exchange and the fall in continental exchange and the drop in Sterling prices.

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*See page 20 of Vol. II.

Mr. Peterson.—The three principal causes would be the rise in the rupee exchange, rise in the Sterling exchange compared to the continental exchange and the efforts made by British manufacturers to meet the resulting fall in continental prices.

President.—That has to be set off to some extent by the dropping of prices in this country. In the last Report the Board attempted to come to some conclusion on this point, but I think it has got to be worked out in some greater detail now and we would like you to work it out. I suppose the main items affected by the rise in the exchange would be all imported materials such as stores and so on, and then there would be the imported covenanted labour.

Mr. Peterson.—There is no fall in that because of the agreements.

President.—Eliminate all the items that would not be affected.

Dr. Matthai.—Has the rise in the exchange had any effect on your labour cost?

Mr. Peterson.—There may be a fall in the cost of passages.

President.—Then your other materials are coal and ore. Can you tell us the effect of the exchange on these two items?

Mr. Peterson.—The position as regards coal is peculiar just now. I don't think the exchange has any effect on it. There is a very limited market in ore and there are only three people who raise it in India.

President.—Part of your profit comes from pig iron. Has it gone up?

Mr. Peterson.—The exchange would not affect the Indian price of pig iron.

President.—I mean what you sell outside. Would you benefit by it?

Mr. Peterson.—I can't say that it would affect it very much because India is producing very much more pig iron than it was producing before, which is forcing the prices down. I don't think that the exchange has affected it very much.

Dr. Matthai.—For export purposes do you quote in rupees or sterling?

Mr. Peterson.—In sending to America we send on consignment. A provisional price is fixed which is adjusted when final payment is made.

Mr. Mathias.—Does the price of pig iron sent to America come under the anti-dumping laws?

Mr. Peterson.—They have put a fresh tariff on Indian pig iron and in one case they were going to put a countervailing duty on the Steel Company's product alone on the ground that they get a bounty. We are still representing the matter and have appealed to the Treasury.

President.—Then so far as the authorities are concerned they have laid it on?

Mr. Peterson.—The first authority has put it on.

Dr. Matthai.—They have not been enforced yet, have they?

Mr. Peterson.—We have not been informed that it has been enforced. I don't think the exchange will really affect exports. Only the imported stores will be affected.

President.—When we talk of rise in the rupee exchange as adversely affecting you, the argument is that you must be benefited by it by the lower level of prices in this country, and we have to ascertain what the benefit amounts to?

Mr. Peterson.—I think the simplest method would be to take the value of the imported materials and make a simple calculation of the advantages we get from the rise in exchange. I don't think it affects anything else at all.

Dr. Matthai.—As far as your raising cost of coal is concerned, what would be the effect on the cost of colliery stores?

Mr. Peterson.—Including colliery and all other imported stores we can tell you what the cost has been for over a year.

Dr. Matthai.—Can you think of anything else that would be affected?

Mr. Peterson.—There would be nothing else that would be affected.

President.—I think the Board in their previous Report estimated that.

Mr. Peterson.—The Board did not do it in detail then.

President.—That argument has to be examined now.

Mr. Peterson.—I think the conclusion the Board came to in the last Report is perfectly sound. They take spelter first and they point out the effect of the rise in the exchange on primary materials. They say " if the exchange were at 1*s.* 4*d.* the extra cost would be Rs. 11 per ton of sheet which is equivalent to Rs. 0·6 per ton of finished steel." Then they go on to say. " The other raw materials such as iron ore, manganese and limestone are produced in the Company's own mines and quarries and their cost is mainly the cost of the labour employed in their extraction."

President.—Will you take these items and any other items that you can think of, freight for instance.

Mr. Alexander.—Do you mean railway freight?

Mr. Mathias.—No, shipping freight.

Mr. Peterson.—There has been a certain reduction in shipping freight during the last two years. Which year do you want to take it from?

President.—Take from March 1924.

Dr. Matthai.—The point is really this. When you ask for increased protection because of rise in the exchange, the objection might be that the rise in exchange means a lower level of prices in the country.

Mr. Peterson.—It does ultimately.

Dr. Matthai.—We have got to meet that objection. If we count all the disadvantages and do not meet the other point, the investigation would be incomplete.

Mr. Peterson.—It is very easy to examine the exact effect of the rise in the exchange on the value of stores, but it is an extremely difficult thing to examine the effect on a commodity such as coal. I don't personally think that there has been any effect, but ultimately it may have some effect. The price of coal has fallen very greatly but I don't think it is due to that cause.

Dr. Matthai.—In connection with your statement showing the consumption of stores during the year 1925-26, you don't distinguish between imported stores and locally indented stores. I find you make a general statement that 90 per cent. is imported. Would it be possible for you to give a detailed statement showing what precisely are imported stores?

Mr. Peterson.—We have given you imported stores in the preceding statement—imported and electrical stores together. These would all be imported material that must be manufactured somewhere else.

Dr. Matthai.—In the foot note to that you say " they represent articles of 'freight' origin on which customs duty is leviable at various rates." What exactly do you mean?

Mr. Peterson.—It is a misprint. It must be " foreign " origin. I think practically the whole of that would be imported and the rise in the foreign exchange would affect their value. Really in my opinion if you total these and make a calculation of the rise in exchange you can have the effect with a sufficient degree of accuracy. I will have that done for you.

Works costs.—Old Plant, New Plant—Relative Efficiency.

President.—We now want to get on to the works costs. First of all we want to examine your costs to see how you have progressed since 1921-22

onwards. We shall take the old plant, that is the plant that was working in 1921-22. Then having done that we shall come on to the new plant and after that we shall compare the old plant with the new plant as to their efficiency. That is the line on which I wish to proceed. We first start with the coke ovens.

Mr. Peterson.—I think Mr. Alexander can give evidence on all these points.

President.—Before I proceed further, I would like to know whether you had made any alterations in your accounting system since we last took evidence.

Mr. Alexander.—Not until the 1st of this April.

President.—In your allocation, for instance, have you made any alterations?

Mr. Alexander.—No.

President.—They are the same as they were in 1921-22.

Mr. Alexander.—Until the 1st of April 1926.

Mr. Peterson.—We usually alter the allocation in April every year according to the experience of the past year.

President.—Is there any substantial alteration?

Mr. Peterson.—We took great care to see that there is no real substantial alteration in that.

President.—Now and again I come across a figure which I can't understand, except as a change in the allocation. Sometimes when the output has increased, the general works allocation appears to be higher than when the output is smaller.

Mr. Alexander.—It depends on the cost above in the various departments. As they change, the proportion of general works expense changes.

President.—One would expect the general works cost to be lower when the output increases.

Mr. Alexander.—It depends on whether the total expense has increased or not.

President.—I think you have given in a table your estimated consumption of coal in 1933-34. What I want to be quite clear about is, is all this coal used in steel making or is part of it used for subsidiaries.

Mr. Alexander.—All used in iron and steel making.

President.—I remember that in the last enquiry sometimes when the consumption of coal appeared to us to be higher we were told that probably some coal was used for supplying power, etc.

Mr. Alexander.—A certain percentage of it would be used.

President.—Is that coal included in the steel account?

Mr. Alexander.—That is for the generation of electricity only.

President.—Can't you eliminate it?

Mr. Peterson.—We can eliminate it by deducting the cost charged to the subsidiaries.

President.—What I would like you to work out is this. You start from ore to pig iron and give your consumption of coal and then from pig iron to finished steel.

Mr. Alexander.—We can't separate that, but we can eliminate the outside. It won't come to very much. We will have it done and send it up if you want.

President.—Will it be 10 per cent?

Mr. Alexander.—It would not be so much as that. It would not be even 5 per cent.

President.—In that case I think it is not worth while going into it.

The Coke Ovens.

President.—I am comparing only two years in this part of the examination, 1921-22 and 1925-26. Since the last enquiry I see that you have shut down your Drag Ovens and the Evence Coppee Ovens as being obsolete.

Mr. Alexander.—They were inefficient and the costs were high.

President.—Because they were " non-recovery."

Mr. Alexander.—Yes.

President.—There is one fortunate circumstance. The price of coal is the same in 1925-26 as it was in 1921-22. It was Rs. 8 in 1921-22 and in 1925-26 Rs. 8-2-4 per ton.

Mr. Alexander.—Practically the same.

President.—It is very curious that the total gross costs of the two years are exactly the same, *viz.*, Rs. 13·83.

Mr Alexander.—Yes, taking only Koppers Ovens.

President.—There is a difference in the coal per ton cost in 1925-26 which is Rs. 11·18 against Rs. 10·59 in 1921-22. Is that somewhat explained by the fact that the yield has dropped a bit from 75·56 to 72·87?

Mr. Alexander.—That is the whole reason.

President.—Is there any deterioration in the quality of the coal or what?

Mr. Alexander.—We found that the figures for 1921-22 were too high.

President.—Do you mean the yield figures?

Mr. Alexander.—We can do it in one of two ways. We can show a high yield in the coke ovens and a high coke consumption in the blast furnaces or we can get a low yield in the coke ovens and a low coke consumption in the blast furnace. We found that the yield shown in the coke ovens was too high and we brought it down, because we weighed more accurately on the blast furnaces and found that we were not producing the coke shown as produced in the coke ovens.

President.—Your practice seems to have improved in these four or five years Your coking time dropped from 23·33 to 21·18.

Mr. Alexander.—Yes.

President.—That ought to show an improvement.

Mr. Alexander.—We are rebuilding the ovens at the present time. The ovens were originally built in 1916-17 and the older they get, the more inefficient they become. At the present moment we are rebuilding them oven by oven so as to put them in good shape to last until the 4th battery of Wilputte ovens is built.

President.—What it means is this: though the coking time has been reduced, you have not been able to benefit by the reduction, because of these alterations going on.

Mr. Alexander.—We Have been pushing fewer ovens.

President.—It really means a difference of 9 or 10 per cent.

Mr. Alexander.—Yes.

President.—It ought to reduce your cost.

Mr. Alexander.—Supposing 50 of them are operating and the coking time is 20 hours, the tonnage is bound to be high. But when the number of ovens in operation is less, the tonnage naturally comes down.

President.—There is a slight improvement in the ash in the coke.

Mr. Alexander.—Yes.

President.—But it has not improved very much.

Mr. Alexander.—I has not.

President.—I understood it ought to come down to 20 per cent.

Mr. Alexander.—It is impossible with the ash in the coal.

President.—I had some idea that was what we were told before.

Mr. Alexander.—I do not know. It is impossible to bring it down with the coal that we have to use.

President.—What I am concerned about is whether you think that there is any deterioration in the quality of the coking coal.

Mr. Alexander.—Coking coal is slightly better than it was in 1921-22.

President.—How do you explain that?

Mr. Alexander.—On account of more severe inspection at the collieries. The ash in the coke is still running round 23 per cent.

President.—Then you think that is about the limit.

Mr. Alexander.—We hope to be able to bring it down to 22 per cent. We have our own coal inspectors. The inspectors at the collieries are under our own supervision.

President.—It is your own coal or outside coal?

Mr. Alexander.—Both.

President.—And you think that coal has improved as a matter of fact.

Mr. Alexander.—It has improved slightly.

President.—The earlier figures for 1916-17 were better than this.

Mr. Alexander.—We were getting a big proportion of dust coal at that time which is much lower in ash.

President.—What has happened to it now? Why can't you get it?

Mr. Alexander.—At that time we were using very little coal and there were huge stocks of dust in the coal fields. That is all gone now.

President.—That was only temporary.

Mr. Alexander.—That was only a temporary condition. In the year 1916-17 the percentage of ash in the coke was 20 per cent.

President.—Do you think that those days will never come back?

Mr. Alexander.—I am afraid not—not until we wash the coal.

President.—So far as the cost above materials go, they are almost exactly the same, if you eliminate this slight rise of ·59 in the cost of coal.

Mr. Alexander.—Yes.

President.—How is it you have not been able to get any better result?

Mr. Alexander.—As I say the ovens have deteriorated. The life of coke ovens is estimated to be 7 to 10 years before they have to be rebuilt.

President.—I think these are about that.

Mr Alexander.—We are rebuilding them now.

President.—Now as regards the by-products, I do not want to go into them in any great detail, because the sulphuric acid plant has only been working recently and there is not really much comparison to be made. But the by-product costs in 1921-22 were Rs. 2·11 which makes a total of Rs. 15·94 gross cost and in 1925-26 it is Rs. 1·33 which makes a total of Rs. 15·16. That drop in the operating cost of the by-product is due to a drop in the price of sulphur or what?

Mr. Alexander.—Yes, sulphur and nitrate.

President.—In 1921-22 you realised Rs. 4·04 per ton leaving a net cost of Rs. 11·90, whereas in this year you realised only Rs. 2·60.

Mr. Alexander.—That is the value of the by-products per ton of coke. That is on account of the drop in the realised price of sulphate of ammonia.

President.—So that on the whole the net cost of the coke is ·66 higher than before.

Mr. Alexander.—Because the operating cost is about the same and we get a lower price for our by-products.

President.—In crediting the value of these by-products, you take the realised price.

Mr. Alexander.—Yes.

President.—Where has this drop come in chiefly?

Mr. Alexander.—Drop in the price of sulphate of ammonia.

President.—I think there was a combine for sulphate of ammonia.

Mr. Peterson.—There is a combine, but the price is steadily falling.

Mr. Mathias.—Sulphate of ammonia is nearly all exported.

Mr. Peterson.—It used to be exported, but now it is all being used in India and they are actually importing.

President.—For agricultural purposes are they using more and more of it?

Mr. Peterson.—Yes.

President.—What is the total consumption in India?

Mr. Peterson.—About 15,000 tons a year.

Dr. Matthai.—Your customers are plantations?

Mr. Peterson.—A great deal of it is used in the Deccan.

Dr. Matthai.—For ordinary cultivation?

Mr. Peterson.—Yes, introduced by the late Mr. Modak. If you would like actual figures, I could get them for you.

President.—It is only curiosity on my part to see whether the people are actually making use of it.

Mr. Peterson.—In the past we used to export at least half of our output.

President.—Besides yourselves, who else are producing it?

Mr. Peterson.—Messrs. Burn and Company, Bengal Iron Company, Jardine, Skinner and Company and Mackinnon, Mackenzie and Company.

President.—What about the Railways?

Mr. Peterson.—I don't think that they make any. There is one concern which is not in the combine. I don't remember its name.

President.—As regards gas, have you made any alteration in your system of gas recovery?

Mr. Alexander.—Do you mean in the matter of using the coke oven gas?

President.—You have given credit for gas for Rs. 36,000 in 1921-22. This year it is Rs. 45,000. I want to know how this credit is given and on what basis you do it. It means that you have used gas worth Rs. 40,000 in some other departments.

Mr. Alexander.—Yes. It is charged to other departments. It is an arbitrary figure we arrive at. We have no means of measuring the gas. If we credit the coke ovens more, we have to charge other departments more. We have no measuring devices. In 1921-22 they didn't charge anything.

President.—Is this gas used in other departments separately or does it go along with some other gas?

Mr. Alexander.—It goes along now with other gas. Formerly we did not use any coke oven gas. Now the Koppers' gas and the Wilputte's gas are both mixed and go to other departments.

President.—Can you tell me what is the value of the gas that you used in the coking ovens themselves?

Mr. Alexander.—What do you mean by that?

President.—You use, say, about half the gas in the coking furnaces themselves.

Mr. Alexander.—That is right.

President.—And the other half is used in the other departments?

Mr. Alexander.—The other 50 per cent. of gas is used in other departments.

President.—50 per cent. of gas is Rs. 45,000.

Mr. Alexander.—That is the credit we have given. It is a question of book-keeping. If we give the ovens a bigger credit, we will have to debit the other departments with a correspondingly bigger sum. We cannot do it satisfactorily until it is measured.

President.—Can it not be measured?

Mr. Alexander.—We have no meters to measure it.

President.—You just take any figure, is that what you do?

Mr. Alexander.—We know from past experience just what amount of coal is required to do a certain amount of heating and on a B. T. U. basis we give credit for the corresponding amount of gas.

Mr. Mathias.—It is not entirely an arbitrary figure then?

Mr. Alexander.—Not as regards the total. We do not know what we are getting from the Koppers ovens. The total amount of gas from the Koppers ovens we have to guess at.

President.—You say that a certain amount of gas is taken from the Wilputte ovens. Have you got a better system of measuring the gas there?

Mr. Alexander.—That is all measured.

President.—It is rather unsatisfactory from one point of view. The last time we commented on this fact, and said that we were of the opinion that sufficient use was not made of gas.

Mr. Alexander.—We are now using all the gas. Formerly about 75 per cent. of the gas from the Koppers ovens we did not use and it was all wasted. About 12 months ago, we made a connection and none is going to waste now. For every cubic foot of gas that we use we save so much coal.

President.—You don't show anywhere, do you, the amount of coking coal that you use per ton as you do, for instance, in the blast furnaces?

Mr. Alexander.—That is shewn in the yield figures. It is about 1½ tons of coal per ton of coke.

President.—So far as the Koppers ovens are concerned, the result is that the cost has gone up.

Mr. Alexander.—That is right. As soon as we get them repaired, the cost will go down.

President.—That is due to some extent to the realised price of by-products. There is no improvement in the practice because the gross cost is the same.

Mr. Alexander.—That is right.

The Blast Furnaces.

President.—As regards blast furnaces, you have got the original furnaces A B and E. The trouble about these is this. I don't know whether it would not be worth while waiting until the costs have been separated. In these cost sheets that you have given for 1925-26, you have got A B C D and E.

Mr. Alexander.—I just brought them with me.

President.—I think that it would be better to wait until the figures are separated. Are A and B very much alike?

Mr. Alexander.—They are of the same size.

President.—Are their costs more or less the same?

Mr. Alexander.—Yes, on the same kind of iron, but they do not always make the same kind of iron.

President.—Which furnace would you like me to take?

Mr. Alexander.—Take the average of A and B.

President.—Have you got the cost sheets of these two?

Mr. Alexander.—We have got them individually.

Mr. Peterson.—Do you want to compare the results on the old furnaces with the results on the new ones?

Mr. Alexander.—In that case we will have to make out yearly cost sheets.

President.—I think that that will have to wait for some time more. To-day we can only take A and B and deal with C, D and E later.

Mr. Alexander.—If you want, the only thing to do is to make yearly cost sheets for the individual furnaces and then average them.

President.—You will have to prepare them on the same basis as these cost sheets

Mr. Alexander.—The average of A and B and the average of C, D and E for the same period.

President.—I only want figures for 1921-22 and 1925-26. I am not going into any intermediate figures.

Mr. Alexander.—We will have to prepare yearly cost sheets for those two years which we never do. The yearly cost sheets cannot be prepared up here.

President.—In that case how do you compare these?

Mr. Alexander.—We know. We are with them every day.

President.—It is rather strange that you do not compare these results every year.

Mr. Peterson.—We have got copies of the daily returns and we are watching the conditions of the plant every day.

President.—We are not watching the plant every day.

Mr. Peterson.—I only said that to show how we compared the yields of the various furnaces. If you want these figures; we will have to get them from Jamshedpur.

The Open Hearth Furnaces.

President.—Have you got the same number of furnaces working now as before?

Mr. Alexander.—The same number of furnaces.

President.—You usually work six at a time.

Mr. Alexander.—We very seldom work 7.

President.—There is an improvement in the total works cost. It was Rs. 68-13-2 in 1921-22 and it is now Rs. 55-11-68. There is a big difference of Rs. 13 odd, which is accounted for in two ways. The first is the drop in the cost of pig and scrap.

Mr. Alexander.—That is accounted for by two things, *viz.*, the lower cost of pig iron and the higher percentage of scrap.

President.—But you charge scrap at Rs. 20 per ton whereas pig iron is charged at Rs. 28-7-0 a ton. In a way it is a great improvement, that you have been able to use more scrap. It is nearly 50 per cent. Of course if you take scrap at Rs. 20 it is a great saving.

Mr. Alexander.—That is the price we should take as compared with the price of pig iron at Rs. 28 or 29. Rs. 20 is a fair scrap value.

President.—You are taking the works cost of pig iron against the works cost of scrap. Scrap has got a market. What I mean is this. If scrap had a market, then it would not be economical—would it, to charge it at Rs. 20 per ton?

Mr. Alexander.—It would, because you get much better operation by using scrap.

President.—I am talking of the prices of pig and scrap. So long as India has got no market for scrap you can afford to charge it at Rs. 20. But Rs. 20 is not the market price of scrap anywhere.

Mr. Alexander.—We cannot sell scrap at Rs. 20 per ton.

President.—Then you might as well export scrap instead of pig iron and make more money. In the trade papers heavy scrap is quoted at £3 10*s.*

Mr. Peterson.—We won't get that price.

Dr. Matthai.—Can you suggest any market price for scrap in India?

Mr. Alexander.—That depends on the kind of scrap.

President.—Heavy scrap has a good deal of market elsewhere.

Mr. Alexander.—Quite so.

President.—I am just trying to point out that at present the result is very satisfactory because scrap has no market, but if scrap had a market as it has in Great Britain and other places where it is sold at more or less £3 10*s.* per ton.

Mr. Alexander.—If we charge Rs. 50 a ton we have to credit the mill at that figure. It is all a question of book-keeping. It goes round in a circle. It is a question of the way in which you want to keep your books.

President.—That is to say your total works costs in other departments will come down.

Dr. Matthai.—It would make a difference in the cost of production in another department?

Mr. Alexander.—Yes. The ingot price will go up and the mill cost will come down. There is no reason why it should be changed.

Mr. Peterson.—At present we have got 1,500 tons of scrap which cannot be sold. We cannot export it. They won't have it. We put 100 tons up to auction and the bid was Rs. 7 per ton.

President.—We won't ask you any more questions on this point because we will have to refer to it when we come to the general examination of the plant. According to my figures if you had used the same quantity of pig iron as you were using in 1921-22, the difference would be only about Rs. 1-4-0 a ton.

Mr. Alexander.—That is a point. It would not pay us to sell scrap at Rs. 40 a ton. It pays us to use it to get better practice.

Mr. Mathias.—Can you tell me the reason for continually using bigger proportion of scrap? Is the product better?

Mr. Alexander.—So as to get more tonnage. The higher the percentage of pig iron we use the lower the tonnage.

President.—Has there been any deterioration in practice?

Mr. Alexander.—No.

President.—I understood that you were finding some difficulty in getting good dolomite.

Mr. Alexander.—Occasionally we have had complaints but on the average it is no worse than before.

President.—And I think the price has remained more or less the same?

Mr. Alexander.—Yes. Limestone was Rs. 6-7-2, it is now Rs. 7-7-6.

President.—There is a little rise.

Mr. Alexander.—But the quantity is very small. The total flux cost was 1·78, it is now 2·03.

President.—Not much difference. Now let us take the cost above metal. The total cost above nett metal is 33·18 against 27·36. That is a difference of 5·82. The first drop is in labour.

Mr. Alexander.—That is all due to higher tonnage and better practice.

President.—Labour accounts for 5·18 as against 6·28 in the earlier year. That is a difference of 1·1.

Mr. Alexander.—That is all due to the increased tonnage because if you take the total labour it is 11·47 lakhs as against 11·41 lakhs in 1925-26.

President.—The output has increased by 38,000 tons. But there are other things too, I think. There is a decrease of 14 covenanted men according to your statement.

Mr. Alexander.—But the total labour is the same.

President.—There were 43 covenanted men in the Open Hearth in 1921-22 as against 29 now. What is that due to?

Mr. Alexander.—In 1921-22 we had some surplus men under training to work in the Duplex. They were transferred to the Duplex and since then there has been a certain number of covenanted staff replaced by local hands.

President.—That is the higher staff, is it?

Mr. Alexander.—They are not covenanted but they correspond to the covenanted.

President.—How many have you got of these?

Mr. Alexander.—I cannot say.

President.—Is it really a transfer of men or is it an economy in the cost of covenanted labour?

Mr Alexander.—Both.

Mr. Peterson.—It is an economy done by means of transfer. Local men would get much lower wages than the covenanted men get.

President.—I thought you worked three shifts a day and that you had two men on each shift?

Mr. Alexander.—Do you mean each furnace? If we had two covenanted men on each furnace that would be 12 per shift, that is 36 per day, *plus* the Superintendent, Assistant Superintendent and two others.

President.—What have you now?

Mr. Alexander.—Now we have less than two men per furnace per shift.

President.—Does one man look after more than one furnace?

Mr. Alexander.—The local hands are now doing the work. We have taken some men from the Technical Institute who are looking after the furnaces.

Dr. Matthai.—These are men taken on covenant?

Mr. Alexander.—No, it is just an agreement.

President.—What I do not understand is, the wages have gone up per ton and yet the costs have gone down.

Mr. Alexander.—The total wages remain the same.

President.—In the Open Hearth the wages per head per annum were 691 in 1921-22.

Mr. Alexander.—That is direct and indirect labour.

President.—In either case I find a good deal of disparity there. Labour cost per ton has gone down, wages per head have gone up.

Mr. Alexander.—That is more than compensated by the output, there is more tonnage.

President.—Is it due to the reduction in the number of men?

Mr. Alexander.—Reduction in the number of higher paid men.

President.—What I want to be clear about is, have the wages gone up? Though the total labour cost has come down, the wages per head have increased.

Mr. Peterson.—The more production you get the more the bonus and so the higher the man's pay.

Mr. Alexander.—Leaving out the bonus there has been practically no increase in wages since 1921.

Mr. Peterson.—We have steadily got rid of the low paid men and got them replaced by better paid men to get better work. That means an increase in the wages per annum but a decrease per ton.

President.—Then the next appreciable item is tools, lubricants and miscellaneous supplies. There is reduction from Rs. 1·91 in 1921-22 to Rs. 1·33 in 1925-26. It must be the total of the first three items.

Mr. Alexander.—The total is Rs. 2·77 in 1921-22 against Rs. 2·07 in 1925-26.

President.—That is not very much, is it?

Mr. Alexander.—No.

President.—In the refractories I see that there is a reduction from Rs. 2·98 to Rs. 2·36. What is it due to?

Mr. Alexander.—Largely due to increase of tonnage. It is Rs. 5,42,000 as against roughly Rs. 5,20,000.

President.—Is that due to increased tonnage?

Mr. Alexander.—Yes, more tonnage per ton of refractories used.

President.—The biggest difference is in the matter of relining. It has come down from Rs. 7·50 to Rs. 4·50. How is the difference of Rs. 3 explained?

Mr. Alexander.—Longer life of the furnace.

President.—That is due to what?

Mr. Alexander.—Making steel faster.

President.—It may be due to more scrap being used.

Mr Alexander.—It is mainly because of the higher tonnage. The higher tonnage is the cause of the reduction in the repair fund. We get more tons of steel per unit of time and it is less hard on the furnace.

President.—I take it that the furnaces are not laid up so often.

Mr. Alexander.—We get more heats per unit of time and they last longer. The two main reasons are the increased quantity of scrap and better gas coal.

President.—I think those are the items that make up the difference. Of course there are minor differences. These items roughly account for Rs. 6.

Producer Gas.

President.—As regards this point about producer gas, I forgot to take it up earlier. All fuel for producing gas is Rs. 6·61 in 1925-26 against Rs. 6·04 1921-22.

Mr. Alexander.—That is right.

President.—It is more by Rs. ·57, yet the quantity of coal used is less.

Mr. Alexander.—The price is higher.

President.—Is that due to the rise in price?

Mr. Alexander.—It must be.

President.—Or is it that the cost of making producer gas has gone up?

Mr. Alexander.—We don't have the exhibits here which would show us.

President.—You don't use any gas in the other department. Is it because you cannot use it or you have not got enough of it?

Mr. Alexander.—We have not got enough of it.

President.—It is more than half a ton of coal in this department and that is a good deal more than the coal they use for the operating department in other places.

Mr. Alexander.—That is right. We use all our coke oven gas in the mills for heating purposes.

President.—Here the cost of coal is put at Rs. 14,58,000. The credit for the gas that you take is only about Rs. 45,000. That would not reduce the quantity of coal even if you use the coke oven gas here. My point is this. This is using more than half a ton of coal per ton of ingots. You said before in our last enquiry it was excessive. It is still excessive.

Mr. Alexander.—Our intention is to replace these with new mechanical producers similar to the ones on the duplex.

President.—It is a pretty big item in the whole of the operating cost here.

Mr. Peterson.—That is one of the first things we propose to correct.

Mr. Alexander.—This will be brought down to about 800 lbs. when we get equipped with the new producers.

President.—I hope so.

Mr. Alexander.—If we used coke oven gas on the open hearth, then we would have to use coal where we are now using coke oven gas.

President.—Of course you have got other gas, blast furnace gas which you cannot use here.

Mr. Alexander.—We are using it for generating steam.

President.—Where?

Mr. Alexander.—In the boilers for electrical generation and driving the steam engines on the steam driven mills.

President.—It is progress in the wrong direction judged in rupees since we last met.

Mr. Alexander.—If we had the exhibits, we could show you exactly where it was.

President.—We shall require them at the time of the final examination when we shall have to look up these points.

Dr. Matthai.—As regards the costs of the open hearth furnaces compared with 1921, the improvement, as far as metal cost is concerned, is due to the lower price of pig and to the larger use of scrap and the improvement in the cost above metal is entirely a question of output.

Mr. Alexander.—That is right.

Dr. Matthai.—When you try to compare the efficiency of the open hearth furnace over a series of years, apart from the test of the general average cost, is it much use taking as a test the particular quantity of steel that would be yielded by a certain quantity of pig?

Mr. Alexander.—It fluctuates so much that it does not make much difference. That again comes back to the question of yield. How many tons of ingots you get out of so many tons of pig and scrap. The yield is always one of the measures of efficiency of any department.

Dr. Matthai.—If you had a larger output as the result of using a larger quantity of raw material, the cost above metal would show a decline per ton. I want to know whether there has been any improvement in the practice and I am asking you whether it is worth while taking the other point into account at all. I put a particular quantity of pig iron in 1921 and the amount of steel I got was so much in proportion and this year on my putting the same quantity, I am able to get a larger proportion of steel.

Mr. Alexander.—That would further decrease your cost of pig and scrap per ton of ingots. The yield in 1921-22 was 83·86 and in 1925-26 it is 84·66. They are very nearly the same.

Dr. Matthai.—Suppose I proceed on this basis, taking your 1925 figures for example, you use 1,271 lbs. of pig and 1,261 lbs. of scrap. In trying to get the quantity of steel yielded by this amount of 1,271 lbs. of pig, I took a ton of ingot 2,240 lbs. and deducted from that the amount of scrap on

the assumption that that scrap is so much steel and then whatever is left is the quantity of steel that has been yielded by 1,271 lbs. Would that be correct?

Mr. Alexander.—No.

Dr. Matthai.—Why not?

Mr. Alexander.—You put in your pig and scrap. They are melted up together. There is a certain loss in the mixture. We can work out theoretically by chemical and metallurgical calculations within one per cent. or less than one per cent. of what it actually should be.

Dr. Matthai.—The test won't be a valid test at all.

Mr. Alexander.—No.

Dr. Matthai.—I am not quite clear about some of these items. What does 'service expense' represent? It is an item which occurs over and over again.

Mr. Alexander.—I think that includes all the exhibits, steam, water, electric power and light, yard switching (including cinder dump), laboratory expense, general works expense and stable and auto expense.

Dr. Matthai.—It is not merely in the open hearth furnace, but in the other statements also I find that your service expense varies more or less in accordance with your labour costs. If you draw a curve, you will find roughly the service expense corresponds to the curve of labour costs.

Mr. Alexander.—The largest item is the general works expense and that is always fluctuating with labour.

Dr Matthai.—With regard to gas producers you have got gas produced in the coke ovens. There is gas coming out of the blast furnace and then there is gas produced in those gas producers.

Mr. Alexander.—That is a unit by itself. There is no connection between open hearth, blast furnace and the coke ovens.

Dr. Matthai.—There is just another small point. That also has a general application, but I had better try to understand it straigh away. The cost of pig iron given for the year 1925-26 in the statement of works cost for steel ingots, stationary open hearth furnaces, is Rs. 28-11·75, but if you take the previous statement about pig iron, there the average cost per ton for the year 1925-26 is given as Rs. 28-12-0. It ought to be the same.

Mr. Alexander.—It should be the same.

Dr. Matthai.—I find in various statements the discrepancy amounts to something more considerable than this.

Mr. Alexander.—That comes from making out the cost sheets in rupees and annas and making out the other statements in rupees, annas and pies.

The Old Blooming Mill.

President.—The total works cost in 1921-22 was Rs. 83·67 and in 1925-26 it is Rs. 73·24. There is an improvement of Rs. 10·43. That is all swallowed up in the cost of ingots and the operating cost has gone up. There is a saving of about Rs. 13 in the metal cost and a loss of Rs. 3 in the conversion cost. That is due to the operating cost having increased.

Mr. Alexander.—Yes.

President.—It is accounted for chiefly by 3 items, an increase in the cost of labour, fuel and steam.

Mr. Alexander.—Fuel is Rs. 2·54 against Rs. 1·30. Labour is Rs. 2·09 against Rs. 1·72.

President.—And steam has gone up from Rs. 2 to Rs. 4·15. What is it due to?

Mr. Alexander.—It is due to decreased tonnage.

President.—How many shifts are you working now?

Mr. Alexander.—Sometimes one shift and sometimes two as against three shifts continually in 1921-22.

President.—Why should the cost of steam go up?

Mr. Alexander.—We have steam on the mill for two to three hours a day more than we are actually rolling.

President.—There is a difference of 100 per cent.

Mr. Alexander.—If we wanted to we could reduce the charge of steam and put it on some other mill.

President.—That would not be correct.

Mr. Alexander.—No.

President.—You have got here, I take it, the old steam plant.

Mr. Alexander.—The same old steam engine.

President.—It is not improving as it gets older.

Mr. Alexander.—That is the reason why we want to shut it down.

President.—Why don't you?

Mr. Alexander.—We are going to.

President.—You are using this old blooming mill for heavy structurals?

Mr. Alexander.—For rolling blooms for the old rail mill and billets for the old bar mill. In another 12 months we expect to be able to roll billets for the bar mill on the sheet bar and billet mill. We can roll them now but we have no way of shearing them.

President.—You are losing nearly Rs. 3½ a ton, in the operating cost.

Mr. Alexander.—We realise that and that is the reason why we want to shut it down as quickly as possible.

President.—From what I can see you are not going to shut it down soon.

Mr. Alexander.—As soon as we get a new mill, we will shut it, *i.e.*, in 1931.

President.—That is some time ahead, is it not? In this, the gas producer has also gone up.

Mr. Alexander.—Because we keep the gas producers going in order to heat up the cold steel and keep the furnaces hot. We make steel at the open hearth and take to the new blooming mill and we bring duplex steel to the old blooming mill so that we can keep the open hearth making rail steel and the duplex plan making mild steel.

President.—It is some distance too.

Mr. Alexander.—Yes.

President.—That hardly conduces to economy.

Mr. Alexander.—Certainly it does.

President.—In what way?

Mr. Alexander.—We might lose a rupee or so per ton on 4,000 or 5,000 tons but much more can be gained by running the open hearth on rail steel and the duplex plant on mild steel. You get more tonnage out that way.

President.—When you have a new mill you will be putting it nearer the duplex plant than this one.

Mr. Alexander.—Yes, between the new blooming mill and the new rail mill.

President.—Is it a continuous process?

Mr. Alexander.—The steel would go from the new blooming mill through to the new rail mill. At present the new mill cannot be built on account of finance.

Dr. Matthai.—The general position with regard to the old blooming mill is that there is no difference with regard to the yield over these years.

Mr. Alexander.—Very regular.

Dr. Matthai.—The improvement in cost is due entirely to the reduction in the nett metal cost, is it not?

Mr. Alexander.—Entirely.

Dr. Matthai.—If you look at the statement regarding the old blooming mill, you will find that there is an increase in the item 'less scrap'. That is not due, I take it, to any variation in the price at which you enter scrap but that is really an increase in the quantity of scrap.

Mr. Alexander.—That is right. The yield must be slightly lower.

Dr. Matthai.—It is not altogether accounted for.

Mr. Alexander.—It varies one per cent. one way or the other.

Dr. Matthai.—The scrap figure has increased from year to year and that shows a certain drop in the efficiency of your practice.

Mr. Alexander.—A drop in the yield is a drop in the efficiency. That is accounted for by the different kinds of steel that we roll. It is different if we are rolling structural. If we roll a greater proportion of one than the other, the yield jumps round.

Dr. Matthai.—Against the item 'Rolls' you enter four annas for the three years.

Mr. Alexander.—Yes.

Dr. Matthai.—Now that represents the cost of repairing.

Mr. Alexander.—We have what we call a Rolls Accounts for the entire plant.

Dr. Matthai.—What does that represent?

Mr. Alexander.—It represents the cost of the manufacture of rolls and the turning.

Dr. Matthai.—I find that in the subsequent statements the figure that you enter against Rolls varies in accordance with the kind of work.

Mr. Alexander.—That is right.

Dr. Matthai.—The figure that you give in the two blooming mills is the lowest that you give. In regard to rails and bars, it is much higher.

Mr. Alexander.—It depends on the kind of work.

Dr. Matthai.—Does it depend also on the speed at which the whole thing is done?

Mr. Alexander.—The larger the section, the lower are the roll costs. You will find that on the sheet mill it is the highest of all.

Dr. Matthai.—With regard to labour, there has been a steady increase. If you look at the labour figures of the old blooming mill, you will find that there has been a reduction of direct labour to the extent of 25 per cent. as compared with 1924. There is also a reduction of tonnage per head of 23 per cent. The increase in the labour cost that you show is in spite of the reduction in the labour force, is it not?

Mr. Alexander.—Quite, because it takes more men in proportion to the tonnage rolled to work the mill one shift than when working three shifts as before.

The Old 28" Rail Mill.

President.—As regards this, the total works cost for 1921-22 was Rs. 116 and last year it was Rs. 112·99, the difference being Rs. 3·01: whereas your metal cost came down from Rs. 117·56 to Rs. 95·60—a difference of Rs. 21·96.

Mr. Alexander.—That is right.

President.—And yet there is a difference of only Rs. 3 odd in the total works cost.

Mr. Alexander.—The same thing applies to the old blooming mill. It is due to decreased tonnage.

President.—There is something more. You see that your metallic mixture increased from 2,547 lbs. to 2,727 lbs., the difference being 180 lbs.

Mr. Alexander.—That is because we are rolling more structural. The scrap has gone up from 203 lbs. to 287 lbs.

President.—There is a change of system here that explains it to some extent. In 1921-22 the credit for scrap was 23·05.

Mr. Alexander.—Yes.

President.—That included second class rails at Rs. 84 a ton.

Mr. Alexander.—Yes.

President.—This year the credit is only Rs. 10·52 for scrap, which takes away Rs. 12 from your advantage of nearly Rs. 21 in the cost of the metal. It is purely due to a change in the system.

Mr. Alexander.—Yes, and partly to the price realised for second class rails.

President.—You had a large turnover in 1921-22 of 10,312 tons as against 2,448 tons in 1925-26 and the price realised was about half, *viz.*, Rs. 84 in 1921-22 as against Rs. 42-15-1 in 1925-26. So, the real advantage in the net metal is reduced to about Rs. 9·43, is not that so?

Mr. Alexander.—That is right.

President.—Why do you still roll rails in the old rail mill?

Mr. Alexander.—We only roll a few hundred tons. We have to, because we are not in a position to roll all our rails on our new rail mill. We might have an order for 100 tons of a special section. It would not pay us to roll those sections on the new mill. We have rolls in the old mill to roll them.

Mr. Peterson.—Recently there has been a change in the section. Still some railways ask us to roll the old sections.

President.—Then there is a big difference in the operating cost, *i.e.*, the cost above net metal. It rose from Rs. 21·49 to Rs. 27·91, the difference being Rs. 6·52.

Mr. Alexander.—It is due to decreased tonnage, an increase in fuel, labour and steam.

President.—The first item is a producer gas.

Mr. Alexander.—As I say we have to keep the furnace hot for 24 hours to roll steel out of them for 8 hours.

President.—You work only one shift.

Mr. Alexander.—Yes. Last year, we sometimes ran two shifts. We were not rolling all the time and yet we had to keep the furnace hot.

President.—The same thing applies to labour.

Mr. Alexander.—Exactly.

President.—But here there is a reduction of covenanted men from 16 to 3 and still the wages have gone up.

Mr. Alexander.—It is partly due to rolling for fewer hours and partly to the replacing of covenanted hands by local Indian labour.

President.—The next big item is steam. It rose from Rs. 3·17 to Rs. 7·11, nearly Rs. 4. Is that also explained in the same way?

Mr. Alexander.—In the same way as in the old blooming mill. It may not be exactly in the right proportion. It may be high. But we cannot measure it. We can only allocate it to the various departments.

President.—How is it that there has been a big reduction in respect of general works from Rs. 1·94 to Rs. ·78?

Mr. Alexander.—Because there might be less outside charges against the new blooming mill.

President.—What do you mean by outside charges?

Mr. Alexander.—Charges such as general works expense, transportation, etc.

President.—That is what I was referring to earlier in the day when the output is reduced your general works charges come down and when your output is increased the general works charges go up.

Mr. Alexander.—The total works cost above nett metal was 12·62 lakhs against 20·68 lakhs in 1921-22. The general works charges would come down something in that proportion.

Mr. Mathias.—What have you included in the general works charges?

Mr. Alexander.—General administration, insurance, salary of the supervising staff and so on.

Mr. Mathias.—The less the work you did, the smaller would be the amount charged?

Mr. Alexander.—That is the principle. The sheet mill has the highest operating cost and it has to bear a higher percentage of the general works expense.

Mr. Mathias.—I take it these general expenses are distributed over the whole works according to some general system?

Mr. Alexander.—Yes, the cost of operating.

President.—Do you take it in proportion to the works cost?

Mr. Alexander.—The cost above metal.

Mr. Mathias.—You distribute it at the end of each year?

Mr. Alexander.—Each month. We revise the allocation every 12 months.

President.—You can not roll heavy structurals except in this mill?

Mr. Alexander.—Not at present. We must wait until we put the new roughing mill. When we get that we can shut down the old 28″ mill.

Dr. Matthai.—The position as regards the 28″ mill is that the nett metal cost has gone down and the cost above metal has gone up on account of reduced output. There is a reduction in the cost of metal which compensates for this. With regard to the point that the President raised a little while ago, if you look at the statement on page 29 (Old 28″ Rail Mill), if you take the items Stores, Tools and Supplies and compare 1925 with 1924 you will find that the figure for 1925 has gone up quite considerably although the output is about half.

Mr. Alexander.—That is quite true; in the same way that it follows the tonnage.

Dr. Matthai.—No, it does not.

Mr. Alexander.—The cost has gone up. As the tonnage goes down the cost goes up.

Dr. Matthai.—I am thinking of the years 1923 and 1924.

Mr. Alexander.—There is a difference of annas 6.

Dr. Matthai.—Reduced tonnage is accompanied by a reduction in the charges.

Mr. Alexander.—We know that we are going to shut that mill down and we are keeping less and less spares.

Dr. Matthai.—Can you explain to me this item 'Less scrap and billets'? The estimate that you gave to the Tariff Board is Rs. 2 and odd and for each of the three years for which you give figures here it is very considerably higher than that.

Mr. Alexander.—Rs. 2 must be a mistake.

Mr. Mathias.—The increase in the cost is due to reduction in output. That I take it is deliberate. It is not the result of your not being able to obtain a market for it?

Mr. Alexander.—Yes.

Mr. Mathias.—It would not be economical to maintain the increased output in the old mill?

Mr. Alexander.—No.

Mr. Peterson.—We might have to use the old mill for rolling certain sections of steel because we have not got the rolls and the necessary equipment in the new mill.

Mr. Mathias.—It pays you to maintain it?

Mr. Peterson.—Yes. We could make very much larger profit if we could roll it on the other side, but we cannot do that unless we put in the roughing mill.

Mr. Mathias.—The sizes that you get done here, are they for articles which are out of date?

Mr. Alexander.—No. These would be for ordinary structural material which we cannot roll elsewhere. It was originally intended that we would shut down the old mill and put in a new mill. We ran out of money and we had to postpone it and until we get the new mill it is impossible to shut down the old mill.

President.—You say you take the duplex steel to the old blooming mill and from the old open hearth you take the metal—

Mr. Alexander.—We take the ingots from the old open hearth to the new blooming mill.

President.—The steam that you use in this old 28″ mill is from the old plant.

Mr. Alexander.—It is all from the old boiler house.

President.—There again it is more expensive. On the new blooming mill the works cost is 68·36 and the average cost that you have given is, I think, 69·41 for the old and new blooming mill. But you charge the old rail mill part of the old blooming mill costs.

Mr. Alexander.—Yes.

President.—What I want to suggest is that the old rail mill is more shown to be obsolete than it is. The saving in the metal cost would be greater than it is shown here, if you take the average cost of the duplex.

Mr. Alexander.—We take blooms from the old blooming mill to the old rail mill.

President.—You use the blooms from the old blooming mill and the billets from the old blooming mill in the old bar mill.

Mr. Alexander.—We heat the blooms from the old blooming mill at the old rail mill. We have not got the heating capacity in the new rail mill.

Dr. Matthai.—Not only is the operation more expensive, but you are working on more expensive raw material.

Mr. Alexander.—It is impossible to do it otherwise.

Dr. Matthai.—What is the position of these old mills? Do they all get their steel from the open hearth?

Mr. Alexander.—Last year they got a very large proportion of it from the open hearth. This year they are getting a large proportion from the duplex. The real reason for that is, the more rail steel we make on the open hearth, the higher the open hearth tonnage, and on the duplex the less rail steel we make the higher the tonnage.

The Old Bar Mill.

President.—Let us now come to the bar mill. The production is about the same 30,000 tons against 28,000. The works cost was 135·50 in 1921-1922 and it has come down to 125·19, that is by Rs. 10·31. You saved on the metal 11·83. In spite of the metal having come down by 11·83, the works cost improved only by 10·31, and on the whole there was a loss 1·52 on the metal in the result. The cost above materials has come down.

Mr. Alexander.—It has gone up by Rs. 1·52.

President.—It works out in a very peculiar way. You have improved in some directions.

Mr. Alexander.—The difference in the metallic mixture is Rs. 11·83. It makes a difference of Rs. 1·52.

President.—In these three or four items you have improved. In others you have gone down.

Mr. Alexander.—Yes.

President.—The gas producer has gone up, labour has gone up and steam has gone up.

Mr. Alexander.—That is right.

President.—These three items roughly account for Rs. 5.

Mr. Alexander.—Yes.

President.—Then you go down in the materials for repairs, tools, supplies and general works by Rs. 3-5-0. That accounts really speaking for the difference.

Mr. Alexander.—The cost above metal was Rs. 40 in 1921-22 and it was Rs. 41·61 in 1925-26 and it would have been less had we rolled the same class of material.

President.—Your steam has gone up by Rs. 3. It is not explained by the decrease in the output in this case. Why has the steam gone up by Rs. 3 a ton?

Mr. Alexander.—Because we were operating in 1921-22 three shifts.

President.—The output is the same.

Mr. Alexander.—But now the mills are idle part of the time.

President.—Do you mean to say that you get 28,000 tons now as against 30,000 tons in 1921-22.

Mr. Alexander.—We are getting 28,000 tons by operating two shifts as against 30,000 tons by operating three shifts. If we rolled same class of materials now as we rolled then, the cost would have been much lower in 1925-26 than they were in 1921-22.

President.—How do you explain that?

Mr. Alexander.—We were rolling more structurals, fishplates and light rails. We rolled nearly 20,000 tons of structural material which is more difficult to roll.

President.—In this year?

Mr. Alexander.—Yes.

Mr. Peterson.—We have transferred all the bar to the new merchant mill.

President.—That is only a bar mill in name then.

Mr. Alexander.—We are rolling fishplates.

President.—Where did you roll bars before?

Mr. Alexander.—On the bar mill. Now we are rolling on the merchant mill. There is not much difference in fishplates.

President.—You didn't roll so much of fishplates and structurals in this mill before?

Mr. Peterson.—15,000 tons of bars have been transferred to the new merchant mill leaving the more difficult sections to be rolled in the bar mill.

President.—Then your practice must have been very bad in the olden days.

Mr. Alexander.—We are not denying that.

Mr. Peterson.—We are only stating facts.

President.—Now you roll more difficult sections and work two shifts in place of three shifts.

Mr. Alexander.—Yes.

President.—And yet the costs have not gone up, because the former practice was not good.

Mr. Alexander.—I admit that.

President.—What improvement has taken place? Is it the training of men?

Mr. Alexander.—We have had more experience and we are also getting better men.

President.—The bar mill is one of the rolling mills where you have more Indians than in any other department.

Mr. Alexander.—We are now getting better results. The bar mill is now in charge of an Indian. Formerly we had an European.

President.—Of course you have only one covenanted employee in the bar mill.

Mr. Alexander.—He is the foreman. The Superintendent is an Indian.

Dr. Matthai.—Is he one of the men trained in the Institute?

Mr. Alexander.—No, he is Mr. Gandhi.

President.—Why should there be any more steam used than before?

Mr. Alexander.—As I say it may be high. Steam charge is merely an allocation. You might say it is guess work. We have to estimate it as near as possible.

President.—What I cannot understand is why you should use more steam operating two shifts than operating three shifts.

Mr. Peterson.—It is a question of allocation. It is curious why it should be more. There is something wrong in the allocation.

President.—The cost of coal is pretty much the same.

Mr. Alexander.—What I imagine is that they have not cut the allocation down when they dropped from three shifts to two shifts. Probably they have left the same percentage.

Mr. Mathias.—Is it spread over the whole works?

Mr. Alexander.—Over places where steam is used.

Mr. Mathias.—The increase in one will mean a reduction in the other.

Mr. Alexander.—Yes.

President.—Most of these figures in this column are a sort of hypothetical figures.

Mr. Peterson.—There is really no method of allocating them. It must always be a guess.

Mr. Alexander.—In allocating steam elsewhere the engineering department usually gives the accounts department the allocation. In our case it is done by the master mechanic. They apparently have not redistributed for two shifts instead of three.

Mr. Mathias.—Even if you had redistributed it, would it result in your new plant showing a considerable reduction in costs?

Mr. Alexander.—It would not amount to anything per ton.

President.—It is, I think, more or less admitted that these three mills really ought to be scrapped as soon as possible.

Mr. Alexander.—These should be shut down at the earliest possible date.

Dr. Matthai.—With regard to the old bar mill, can you give me the reference for the average cost of billets which you have entered here? Is that the cost of your raw material on that mill?

Mr. Alexander.—It is made up of billets from the old blooming mill and a few billets from the new blooming mill.

President.—You don't separate the two.

Mr. Alexander.—No, it is all the same.

Dr. Matthai.—I find that it considerably varies in the statements.

Mr. Alexander.—We get billets from two sources, one from the old blooming mill and the other from the new blooming mill.

Dr. Matthai.—There is no way of checking it.

Mr. Alexander.—There are some billets from the sheet bar and billet mill too.

Dr. Matthai.—With regard to the labour cost of this mill, I find the labour cost in the old bar mill is the highest figure you have in any of these mills except the sheet mill.

Mr. Alexander.—That is right.

Dr. Matthai.—Why is that?

Mr. Alexander.—It is so much hand labour.

Dr. Matthai.—So it has nothing to do with the fact of Indian supervision.

Mr. Alexander.—No.

Dr. Matthai.—As regards the gas producer, I find the figure for 1925-26 is Rs. 1-5·52. That shows a very sharp reduction against the previous years. How do you account for that?

Mr. Alexander.—It should have been higher. Correct figure is Rs. 5-15·52.

Dr. Matthai.—Is the total correct?

Mr. Alexander.—The total should be approximately correct.

Continued on the 15th June 1926.

President.—Mr. Alexander, I would like to know the output of the open hearth in the colder months as compared with hotter months. I think that you have get them in the monthly cost sheets. What do you consider as your colder months?

Mr. Alexander.—October to March inclusive.

President.—Could you give us the outturn from 1921-22 so that we might see how it works out?

Mr. Alexander.—Do you want it right through year by year?

Mr. Peterson.—We gave it in the first enquiry.

President.—In that case, it must be up to 1921-22 only.

Mr. Peterson.—We shall bring it up to date.

Mr. Alexander.—Is it only for the open hearth that you want?

President.—Yes. Is there any other part of the plant in which climatic conditions affect the output?

Mr. Alexander.—No. Yesterday you raised the point about the open hearth gas producer you remember. In 1921-22 the gas producer fuel was Rs. 6·04 and in 1925-26 it was Rs. 6·61. The coal per ton used was less. I said it must be in the price of coal which it was. The price of coal in 1921-22 was Rs. 7-12-0 a ton and in 1925-26 it was Rs. 10-2-3—a difference of Rs. 2-6-0 a ton more.

President.—Is that f.o.r. colliery?

Mr. Alexander.—No, it was the price charged at the works.

Comparison of Costs: Old and New Plants.

President.—This morning, we will start on the new plant and take this year's costs, *i.e.*, the costs for 1925-26 and compare them as we go along with the costs of the old plant, so far as, and where, they are comparable.

Mr. Alexander.—Yes, taking the same period 1925-26 for both the old and the new plant. And we will take the remainder of the new plant separately.

Wilputte Coke Ovens.

President.—Let us take the Wilputte coke ovens first. The gross cost was Rs. 13·24 per ton. The cost of coal charged per ton was Rs. 11·15, the balance of Rs. 2·09 being the operating cost.

Mr. Alexander.—Yes.

President.—It is better than Koppers which was Rs. 2·65. The difference between the two is Re. ·56. I take it that that is accounted for more or less by the difference in labour, which, I think, is the main item.

Mr. Alexander.—Labour in Wilputte coke ovens is Rs. 1·04 and in the other it is Rs. 1·42, the difference being Re. ·38.

President.—This is explained by the fact that the output per man has increased in the Wilputte.

Mr. Alexander.—Yes.

President.—It has gone up from 216 to 300. What accounted for the higher output?

Mr. Alexander.—It is a better type of ovens and more up to date. Further there is more mechanical handling and less work to be done by hand labour.

President.—Where does hand labour come in here?

Mr. Alexander.—The handling of coal and coke in the ovens is done by conveyors.

President.—Coal is conveyed by conveyors in both cases?

Mr. Alexander.—The coal crushing plant is much more modern in the Wilputte than in the Koppers ovens.

President.—There is also a reduction in the coking time—about an hour I think. In the case of the Wilputte it is 20—23, whereas in the case of the Koppers it is 21-18.

Mr. Alexander.—The Koppers ovens are old. The Wilputte ovens are new. We will get a still higher output in the latter than at present.

President.—Has there been any deterioration in the Wilputte ovens so far?

Mr. Alexander.—Nothing except the deterioration which was the result of the last strike. The first strike did not affect the ovens.

President.—Which strike are you referring to?

Mr. Alexander.—The 1922 strike. We had two batteries of Wilputte ovens in operation when we had the strike. Every time you shut down a battery of silica ovens, they deteriorate. They are built of silica bricks. When they cool down, they contract and when you heat them again, they expand and develop cracks.

President.—Going on to the nett cost in the Wilputte ovens the cost of operating the by-products department is Rs. 1·03. What is it in the other?

Mr. Alexander.—Rs. 1·33.

President.—Let us take the nett cost first. The gross cost is Rs. 14·27. The value of the by-products is Rs. 2·69. The nett cost, therefore, is Rs. 11·58. The total nett cost in the Koppers ovens is Rs. 12·56.

Mr. Alexander.—Just about a rupee cheaper.

President.—That is explained by these two things. I think that the operating cost is down by Rs. ·30. But there is a difference in the realised price which I don't understand. Do you realise Rs. 2·69 in the case of the Wilputte ovens against Rs. 2·60 in the case of the Koppers ovens? Why should there be any difference in the realised price? It is a small matter, but there should be no difference really.

Mr. Alexander.—There is one thing. We are selling neutralised sulphate of ammonia from the Wilputte ovens for which we get a higher price.

Mr. Peterson.—In the case of the Koppers ovens it is not neutralised. Probably that accounts for the difference.

President.—As regards the difference in the operating cost, is it explained by any difference in the process?

Mr. Alexander.—No. The unit is bigger and the output per man is greater, that is the sole reason. In the Wilputte ovens there are three sets of batteries which require no more men than are required to operate one battery of Koppers ovens. That is for the by-product end, not the oven end.

President.—Then again, the credit for gas has gone up really four times more than the output.

Mr. Alexander.—It should be so.

President.—I mean to say that it has not gone up in the same proportion to the output.

Mr. Alexander.—It may not be in the same exact proportion. It is about 4½ times. In the case of the Koppers ovens it is 132,122 tons and in the case of the Wilputte ovens it is 561,948 tons. It is about 4¼ times. Roughly, it should be in the same proportion.

President.—As we go along I want to see, supposing the whole plant was of the same type, how much you would save. We just want to get a rough idea. In this case, there is roughly a loss of Rs. 1,30,000.

Mr. Alexander.—The loss is about a rupee per ton.

President.—Yes, it comes to about Rs. 1,30,000. It seems that in your actual works cost for March 1926 there has been a drop in both of nearly a rupee a ton in coke. I suppose that is due to the price of coal being cheaper.

Mr. Alexander.—That is the main reason.

President.—It is cheaper by about a rupee. In some places you give the rate of coal charged to your works, but in your estimates you have given rates f.o.r. collieries. How much have you to add to the rate f.o.r. collieries?

Mr. Alexander.—We add the freight.

President.—How much does that come to?

Mr. Alexander.—Rs. 1-8-0 on an average.

Dr. Matthai.—With regard to the cost of coke, the figures that you have here are the average of your raising cost and the market price.

Mr. Alexander.—That is the average of our purchased coal and our own coal *plus* the freight.

Dr. Matthai.—Supposing you took the whole cost of coal at the market price.

Mr. Alexander.—That would not be the true value. We take what we actually pay.

Dr. Matthai.—I am not asking you to do it. I am only asking you what difference it would make if you took the whole cost at the market price?

Mr. Alexander.—It would raise our cost.

Dr. Matthai.—By how much approximately?

Mr. Alexander.—We are using 30 per cent. our own coal and 70 per cent. outside coal. Our coal is about Rs. 1-8-0 cheaper than outside coal.

President.—It would make a difference of 5 or 6 annas.

Mr. Alexander.—Yes.

Dr. Matthai.—As regards the question of labour, the President was drawing your attention to the increased tonnage per head. I must draw your attention again to the fact that the average cost of coke per ton that you give here is rather misleading when you have these slight discrepancies.

Mr. Peterson.—It is unavoidable. We did not have the final figures for 1925-26 when we prepared these statements.

Dr. Matthai.—You took 1924-25 figures then?

Mr. Peterson.—They ought to be roughly the same.

Dr. Matthai.—I find that there are some three different figures. Sometimes there is a bigger difference. In the case of coke it is rather an important matter.

Mr. Alexander.—Do you mean as compared with the cost sheets?

Dr. Matthai.—Please look at the figure given for coke in the statement (No. 52) showing the prices of raw materials charged in the cost sheets and also look at the figure under Wilputte ovens.

Mr. Alexander.—Do you mean coking coal or coke?

Dr. Matthai.—I want you to look at the figure for coke. This is Rs. 14-1·66, that under Wilputte ovens is 13-13·92. This would be 14-9·3 a difference of an anna and a half. I am trying to draw your attention to that because there are other figures in regard to which the discrepancies are greater.

President.—It will be very important, Mr. Alexander, when you read the evidence to check the figures.

Dr. Matthai —Rs. 14-10·66 is the figure that you give in the Pig Iron statement. You might look into it later and correct it. With regard to the labour question I want you just to look at this statement showing direct labour in the Coke Ovens (Statement No. 57). In that statement you show no

covenanted employees in the Coke Ovens for the three years. What was the position of a man like Mr. Gupta?

Mr. Alexander.—He was not a covenanted employee but was in the same position as a covenanted employee. He was not under an agreement of the same type as a covenanted employee.

Dr. Matthai.—He has been succeeded by a covenanted employee?

Mr. Alexander.—No.

Mr. Mathias.—These cost sheets for 1925-26, there has been a large reduction in the price of coal since then?

Mr. Peterson.—Some of the contracts expire in June. The reduction in them will come in afterwards.

Mr. Mathias.—So that the biggest reduction in costs from the reduction in the price of coal will probably occur this year?

Mr. Alexander.—It will be from July.

Dr. Matthai.—You are expecting a rise in the price of coal, are you not?

Mr. Peterson.—Ultimately.

The Blast Furnaces.

President.—As regards the blast furnaces we had better leave them alone for the present. We cannot compare them at all. We have not got separate figures for the old and new plant.

Mr. Peterson.—There is nothing at all obsolete about the blast furnaces. What you can do is to compare the results of the original two blast furnaces, say, 1914-15, with the results of the total plant now. The old blast furnaces have a life of 50 to 60 years.

Mr. Alexander.—Take the Kopper Coke Ovens. They are going to show higher cost than the Wilputte. In the same way the old blast furnaces will show higher cost than the new ones but we cannot scrap them.

Mr. Ginwala.—I want to assess the difference between the old and the new plant right through.

Mr. Peterson.—The old blast furnaces are in no sense old-fashioned. They are very much in advance of the average European furnace. I don't think you will find very much difference.

Mr. Alexander.—There would be nothing like the same difference as between the old blooming mill and the new blooming mill or the old rail mill and the new rail mill.

President.—Then so much the better, but I think we ought to have some figures.

Mr. Alexander.—I will have the statements prepared.

The Duplex Plant.

President.—We will now get on to the duplex. It is rather difficult to compare the duplex with the open hearth because there is an extra process in the duplex. What I propose to do is to convert it into a sort of continuous process, pig iron to ingot, I first ascertain the quantity of hot metal that you use. I start from that. As regards the cost above material I add to the cost above material in the duplex the cost of the converter under the different headings. At the end I add 10 per cent. to the converter cost because there is extra metal used. That gives the total cost above material from hot pig to ingot. Now, first we will determine the amount and cost of pig iron. 2,460 lbs. of pig iron is equal to one ton of blown metal. 2,496 lbs. of blown metal is equal to one ton of ingot. This means about 2,827 lbs. of pig and scrap for one ton of ingot. The cost of the pig iron is thus about 30·83; to which must be added the cost of the scrap 5·05. That comes to 35·88. Then deduct the scrap produced which is ·61. Then the nett cost of the metal is 35·27.

Mr. Alexander.—That is right.

President.—I take the ingot cost, that is 58·54, less the cost of metal 35·27 which leaves 23·57. That is the cost above materials that we have got to compare with the cost above materials from the open hearth, which is 27·36. The duplex cost above material is less cheaper by 3·79, but the nett metal charge is more. It is 35·37 in the duplex and 28·16 in the open hearth so that there is a difference of 7·11.

Mr. Alexander.—That is right.

President.—I arrive at this 23·57 in this way. That is approximately right, is it not?

Mr. Alexander.—Yes.

President.—We will now start with the following figures:—

	Open Hearth.	Duplex.
Flux	2·03	1·96
Moulds and Stools . . .	1·50	2·00
Fuel for producer gas . .	6·61	2·63

What accounts for these differences?

Mr. Alexander.—There is a longer time of heat in the open hearth. In the duplex steel is made much quicker per unit of time. Steel is partly made in the converters where no fuel is necessary whereas in the open hearth gas coal is required throughout the entire process. Part of the refining in the duplex is done in the converters where there is no fuel required.

President.—You must be using something instead.

Mr. Alexander.—We are using compressed air.

President.—Would this come under miscellaneous fuel?

Mr. Alexander.—No, it woldn't be under that.

President.—There is fuel for miscellaneous purposes. That is the only thing I see.

Mr. Alexander.—It would not be under that. Some of it will be under exhibit C, electric light and power.

President.—I have not got it under a separate heading.

Mr. Alexander.—That is where the majority would come, but still it is much smaller than on the open hearth even if you add all that in.

President.—Fuel for melting producer gas in the open hearth is Rs. 6·61.

Mr. Alexander.—In the open hearth we would expect a reduction down to Rs. 5 with new producers.

President.—By erecting a new type of producer?

Mr. Alexander.—A more modern type of producer.

President.—I have omitted certain minor items. The total from moulds and stools, down to miscellaneous fuel in the open hearth is Rs. 8·17 against Rs. 4·03 in the converter and the duplex combined.

Mr. Alexander.—What items do you include?

President.—From moulds and stools down to miscellaneous fuel. I don't know why moulds and stools are put along with fuel. Is there any reason why you should put the moulds along with fuel?

Mr. Alexander.—It is just a question of grouping.

President.—It has been going on for ever! You have got a sub-total of Rs. 8·17 which includes these three items against Rs. 4·93 in the converter and the duplex combined.

Mr. Alexander.—The majority of it is in the fuel.

President.—The difference is Rs. 3·24.

Mr. Alexander.—Practically the difference is in the fuel for melting.

President.—Then we take the total labour in the open hearth which is Rs. 5·18 against Rs. 3·14 in the converter and the duplex. The converter is only Rs. ·39. There is a difference of Rs. 2·4.

Mr. Alexander.—That is right.

President.—The main difference is in the total producing labour. In the open hearth producing labour is Rs. 4·49 against Rs. 3·24 in the converter and the duplex. What do you call " producing labour " exactly?

Mr. Alexander.—Labour actually employed in the department.

Dr. Matthai.—It is the same as direct labour.

Mr. Alexander.—Yes, that is explained in the tonnage per head per annum.

Dr. Matthai.—In the direct labour.

Mr. Alexander.—In the direct labour during the year 1925-26 tonnage in the open hearth is 199.

Dr. Matthai.—But here it is less. It is 192, so that does not explain it.

Mr. Alexander.—It may be that 195 is the average.

Dr. Matthai.—The wages are high in the open hearth.

Mr. Alexander.—The wages per head per annum in the open hearth were Rs. 734 and in the duplex Rs. 616.

Dr. Matthai.—Do you think that explains that?

Mr. Alexander.—The tonnage per man must be higher in the open hearth. The total labour in the open hearth is 1,554, whereas in the duplex including the converters it is 1,791, the tonnage per head per annum in the duplex and in the open hearth being 140 and 142.

President.—You are taking direct and indirect labour together.

Mr. Alexander.—Yes. That is wages per head per annum are more in the open hearth. It must be that if the cost per ton is higher, the wages per man per annum must be higher.

President.—You have got more covenanted men in the open hearth than in the duplex plant, but I don't see that there is very much difference elsewhere.

Mr. Alexander.—I don't think there is very much difference in the present year.

President.—The total labour cost in the open hearth is Rs. 5·18 as against Rs. 4·26 in the duplex. There is not much difference.

Mr. Alexander.—About a rupee.

President.—The difference is actually Rs. ·92 and now that is explained. These two items practically make up the difference between the cost above material in the two. The other differences are slight. The total cost above nett meal in the open hearth is Rs. 27·36. In the case of the bessemer it is Rs. 4·41. If you add 10 per cent. on that, it comes to Rs. 4·85. The total cost above materials in the duplex is Rs. 18·72. If you add the two, it comes to Rs. 23·57 for the whole process. There is a saving on the duplex process of Rs. 3·79 in the total cost above materials compared to the open hearth.

Mr. Alexander.—Yes.

President.—In the duplex process the total work cost for ingots is Rs. 3·32 less than in the open hearth. That is the total cost of ingots.

Mr. Alexander.—Yes.

President.—In the duplex process, you use more materials, but in total works cost above materials you are down by Rs. 3·32.

Mr. Alexander.—Rs. 55·52 against Rs. 58·64.

President.—Judging by results so far, if the cost of your pig iron increases, then the duplex would not be as economical as the open hearth.

Mr. Alexander.—Why?

President.—Because you are using more scrap in the latter which costs Rs. 20.

Mr. Alexander.—If the cost of pig iron goes up, the price of scrap will also increase. There is a certain relation between the two.

President.—That relation of course has always been the same so far.

Dr. Matthai.—They move up and down in the same way.

Mr. Peterson.—They are inter-related. The steel scrap we get from the duplex plant is being used in the open hearth furnace.

President.—That is one of the advantages of the duplex. You get more scrap available for the open hearth.

Mr. Peterson.—Also we have been operating the open hearth for 14 years and the duplex for two years.

President.—On the other hand when you use duplex steel for rails, you have far too high a percentage of second class rails.

Mr. Alexander.—Who says that?

President.—I say it from the figures.

Mr. Peterson.—It was so in the past.

President.—The percentage was about 16.

Mr. Alexander.—That was not a result of the duplex steel.

President.—I take it that you use most of your steel in the new rail mill.

Mr. Alexander.—80 per cent. of the rail steel we are using now is open hearth steel.

President.—That is why second class rails may have come down.

Mr. Alexander.—Not at all. I can reverse it to-morrow and have as good an outturn of rails from the duplex as from the open hearth steel. The reason for doing it this way is that we can get more production by making rail steel on the open hearth and mild steel on the duplex.

President.—As you get along, the reduction in costs depends very largely on the increased output. You are short of the full output by about a third at present.

Mr. Alexander.—Last year it was 250,000 tons as against 360,000 tons, the full estimated output.

Dr. Matthai.—In comparing the duplex plant with the open hearth, the comparison is very difficult, and perhaps slightly misleading, because of two things. The first is that the duplex plant is still to some extent in the experimental stage and the other thing is the question of scrap. On the question of labour I am taking these three years. There is quite a considerable reduction in labour in the last three years. In the case of the duplex plant, it is entirely a question of output.

Mr. Alexander.—That is right.

Dr. Matthai.—There is no reduction in the direct labour.

Mr. Alexander.—It is entirely output.

Mr. Mathias.—I take it that the more scrap you use in the open hearth, the less is your producing cost.

Mr. Alexander.—That is right.

Mr. Mathias.—So that really the efficiency or cheapness of the open hearth process depends on the amount of scrap which you turn out.

Mr. Alexander.—Not quite so. We don't aim to make scrap. We have to use whatever there is.

Mr. Mathias.—The lower the price of scrap the cheaper your open hearth costs will be and the more expensive your other costs will be.

Mr. Alexander.—As regards the duplex, that is right.

The New Blooming Mill.

President.—When did the new blooming mill come into operation?

Mr. Alexander.—In October 1923.

President.—So, you have got two complete years of experience of that.

Mr. Alexander.—Yes.

President.—The total works cost of the new blooming mill is Rs. 68·36 and that of the old blooming mill is Rs. 73·24. The cost of the nett metallic mixture in the case of the new blooming mill is Rs. 64·07 and the cost above nett metal is Rs. 4·29 as against the nett metallic mixture Rs. 61·87 and the cost above nett metal Rs. 11·37 in the open hearth and there is a difference of Rs. 7·08 in the cost above metal. There is also another big difference. I find that you charge the new blooming mill at a higher rate for slabs. Let us take it this way. The difference in the total metal charged is as follows:—

New blooming mill	Rs. 66·36
Old blooming mill	Rs. 64·04

So that there is a difference of something more than Rs. 2 which is accounted for by the different rates at which you are charging the two mills.

Mr. Alexander.—That is the difference between the open hearth and the Duplex ingots.

President.—The open hearth ingots are cheaper.

Mr. Alexander.—New blooming mill Rs. 57 odd and old blooming mill Rs. 56 odd.

President.—There you are charging the old mill at a slightly lower rate than the other.

Mr. Alexander.—That is because of the cheaper ingots from the open hearth.

President.—That makes an average difference of one rupee a ton.

Mr. Alexander.—Yes.

President.—Really speaking, the cost of the old blooming mill is a rupee higher than the figures show or rather would be, is it not?

Mr. Alexander.—Assuming that the yields are the same.

President.—In the metallic mixture there is a difference of Rs. 2·32. You halve it—that would be Rs. 1·16 which will have to be added to the total cost of the blooming mill. I am trying to point out that though the difference in the cost above metal is Rs. 7·08, it is really about Rs. 8·24, is that right? The old blooming mill really costs you more than what is shown here.

Mr. Alexander.—Yes.

President.—The first difference I think is in the producer gas. In the old blooming mill it is Rs. 2·54 as against Re. ·45, the difference being Rs. 2·09. You apparently use only the gas from the coke ovens in this.

Mr. Alexander.—That is right and it is a low charge.

President.—It is not a real charge.

Mr. Alexander.—It is not. If we charge more here we can give the coke ovens more credit. If we increase the cost here, we decrease the cost in the coke ovens.

President.—So that the comparison is not very sound.

Mr. Alexander.—No.

President.—The next item is labour. The total labour in the old blooming mill is Rs. 2·09 as against Rs. 1·48 in the other, the difference being Re. ·61. Is that due to tonnage?

Mr. Alexander.—Yes.

President.—The production here is much greater. Then, as regards steam it is Rs. 4·15 in the old mill as against Re. ·04 in the new.

Mr. Alexander.—You should take steam and electric power together. The new blooming mill is electrically driven whereas the old blooming mill is steam driven. You have got to add steam and electric power and light together.

President.—I cannot follow these figures as they are given. The columns do not run straight. Let us take first of all steam which is Rs. 4·15 in the

case of the old blooming mill. Give me corresponding figures for the new blooming mill.

Mr. Alexander.—Re. ·61 for steam and electric power and light.

President.—Even so there is a difference of Rs. 3·54.

Mr. Alexander.—That is right.

President.—That is a big difference.

Mr. Alexander.—The steam charged on the old side may be high.

President.—I shall go into the exhibits to-morrow.

Mr. Alexander.—It is high. That is the reason for doing away with steam-engines and putting in motors.

President.—What it amounts to is this that in trying to assess the difference in rupees on a production of 87,825 tons in the old blooming mill you lose by comparison about Rs. 7½ a ton or Rs. 6,84,000, that is not making any adjustments for the cost of metal.

Mr. Alexander.—Yes.

President.—If you make the adjustment you will have to add about Rs. 87,000 more.

Mr. Alexander.—It will come to about Rs. 10,00,000.

Mr. Peterson.—It will probably be higher than that.

President.—But the overhead charges will be much greater in the new blooming mill. If you put scrap value on the old mill the total all in costs will not be much more.

Dr. Matthai.—In actual practice you feed your new blooming mills with ingots from the duplex.

Mr. Alexander.—From the duplex and the open hearth.

Dr. Matthai.—I was wondering whether this accounting difference with regard to the average cost of ingots in the old and new blooming mills corresponded to actuals.

Mr. Alexander.—It is the average on a tonnage basis.

Dr. Matthai.—So that if you leave that out, the only fact that you could get out of this statement is the cost above materials is considerably less in the new mill than in the old as a result of increased output.

Mr. Alexander.—That is right.

Dr. Matthai.—There is an improvement in regard to scrap in the new blooming mill if you compare 1925-26 with 1924-25. If you look at the average of the three years, there is, I think, more scrap in the new than in the old.

Mr. Alexander.—Yes.

Dr. Matthai.—If you took for example 1924-25, the output in both the mills was practically the same, but there was considerably more scrap.

Mr. Alexander.—The same remark applies here as in the case of the open hearth and the duplex. We have been operating the new blooming mill only for the last two years. As time goes on, the yield on the new blooming mill will be greater than on the old blooming mill.

Mr. Mathias.—I observe that in the blooming mills as well as in the duplex process you credit Rs. 20 for scrap, whereas in the open hearth furnace process I see that the actual figure you pay for scrap is Rs. 29-1-7.

Mr. Alexander.—It is rail scrap. We charge that at a higher price to the furnaces.

Mr. Mathias.—This is not the price you pay for it.

Mr. Alexander.—It is just a book entry.

The New Rail Mill.

President.—I think that this has been in operation for only one complete year.

Mr. Alexander.—Yes.

President.—So you must take 1925-26 for comparison. In the old rail mill, you have been manufacturing rails, structurals and billets.

Mr. Alexander.—That is right.

President.—I shall simply take the rails from the old mill for the moment. The total production of rails in the old mill was 21,452 tons and the whole production of the new rail mill was 94,236 tons. The total works cost in the old mill is Rs. 112·99 as against Rs. 96·02—a difference of Rs. 16·97. The nett metal charged in the old mill is Rs. 85·08 leaving the cost above metal at Rs. 27·91 as against the nett metal charged Rs. 80·58 in the new mill leaving the cost above metal there at Rs. 15·44.

Mr. Alexander.—That is right.

President.—First of all I see in the materials charged there is some difference. In the old mill, it is 2,727 lbs. as against 2,976 lbs. in the new rail mill —the difference being 249 lbs. That is to say, about 10 per cent. more.

Mr. Alexander.—The yield is 75 per cent. in the new rail mill as against 82 per cent. in the old mill.

President.—What is that due to?

Mr. Alexander.—Second class rails, during the first 7 months of the year.

President.—What are they due to?

Mr. Alexander.—Due to want of a re-heating furnace.

President.—In the new plant?

Mr. Alexander.—Yes.

President.—You have added a new furnace?

Mr. Alexander.—Yes, and we have brought the seconds from 15—16 per cent. down to 8 per cent.

Dr. Matthai.—When did you set that up?

Mr. Alexander.—In November 1925.

President.—I find that second class rails in this year come to 17,624 tons.

Mr. Alexander.—Yes.

President.—You ought really to divide the first six months and the second six months in the new rail mill. In the first six months the seconds were very high.

Mr. Peterson.—We will give you that.

President.—In this connection I think it is rather important to see how far we can take your costs. We are supposed to finish the report in October. It is a pity you have not really got even one year's complete experience. It may be just possible to get the costs up to August in September.

Mr. Alexander.—Yes.

President.—How many days would it take to complete your costs of the previous month?

Mr. Alexander.—18th to 20th is the earliest time.

Mr. Peterson.—You want it up to the 30th September?

President.—If we could get the results of the previous six months that would be sufficient.

Mr. Alexander.—We will give your figures for the first six months of the financial year.

President.—We should like to be informed as to the costs every month as you go along. It may be some trouble to make up the average for the preceding period.

Mr. Peterson.—About the 15th or 16th September we will have our costs up to August. Then we can put in the September cost by the end of September. By that time we will know whether anything serious has happened to alter the costs.

President.—It may mean a little trouble to the office but what I want is this. At the end of three months, April to June, let us have the monthly

costs as well as the average costs for the three months. This is also the form in which I want them up to September.

Mr. Peterson.—Do you want all the details worked out?

President.—If there is any serious discrepancy you may as well do it. What we want is the monthly cost as well as the average from 1st April 1926 onwards.

Mr. Alexander.—We can do that.

President.—I don't understand the metal charge in the old rail mill 95·60. The total gross metal charge in the new rail mill is 90·81; in the old rail mill it is 95·60 though the number of lbs. charged per ton in the new mill is higher. Is that accounted for by the cost of blooms? I think you explained the reasons yesterday.

Mr. Alexander.—Yes, that is old blooming mill cost *vs.* new blooming mill cost.

President.—We shall now take the cost above material. The difference between the two is 12·47 per ton. There are only three big items which account for it. The first is the fuel producer gas which in the old mill is 2·58 and in the new mill the Wilputte ovens cost is charged at ·23, a difference of 2·35. Probably in this case also there is too little charge for gas?

Mr. Alexander.—Yes, it may be double that.

President.—The next big difference is in the total labour which is 9·54 against 6·11, a difference of 3·43.

Mr. Alexander.—That is a question of more tons per man.

President.—Are you working three shifts in the old rail mill?

Mr. Alexander.—One shift just at present. Two shifts for the major portion of the time last year.

President.—Against three in the new rail mill?

Mr. Alexander.—Yes.

President.—That may account for it to some extent.

Mr. Alexander.—Yes, higher tonnage.

President.—The last item is steam, 7·11 against electricity 2·28—a difference of 4·83. That really accounts for a difference of nearly Rs. 11.

Mr. Alexander.—Yes.

President.—You might say Rs. 12-8-0 a ton on this output of 21,000 tons of rails which is equivalent to a loss of about Rs. 2·57 lakhs.

Mr. Alexander.—That is what we estimated on the old mill. We took it at Rs. 20 to Rs. 25 a ton.

Second Class Rails.

President.—Do you generally get half the price of first class for second class rails?

Mr. Alexander.—Much less. We cannot sell them.

Dr. Matthai.—What are they used for?

Mr. Peterson.—These are used for sidings. One firm took a lot for forest railways. The Port Commissioners take some of them. The Railway Board will not allow them on the main line.

Dr. Matthai.—These are all heavy rails?

Mr. Peterson.—Most of them would be heavy rails. The light rails specification won't be so high.

Mr. Mathias.—These steam tramways, what about them?

Mr. Peterson.—Those will be light railways. The Raipur forest railways took 11,000 tons of 60 lb. rails at Rs. 65 a ton, because they found that it is much better and cheaper to have second class rails for these railways than light rails.

President.—Take 30 lb. rails. How do they compare with second class rails?

Mr. Peterson.—They would sell at about Rs. 130 a ton as against Rs. 40 a ton for second class rails. We find it very difficult to dispose of these second class rails just now.

Dr. Matthai.—In the new rail mill you get your blooms entirely from the new blooming mill and in the old rail mill entirely from the old blooming mill, is it not?

Mr. Alexander.—Yes.

Dr. Matthai.—The yield in the new blooming mill in 1925-26 is just 1 per cent. below the yield in the old blooming mill, so that in the new rail mill the total amount of rails that you get from ingots works out to 65 per cent. against 72 in the old rail mill.

Mr. Alexander.—That is right. That is entirely due to the high percentage of seconds in the early part of the year.

Mr. Mathias.—This point about scrap again. You take it at Rs. 20 here in the old rail mill and you charge Rs. 29 a ton to the open hearth. It seems to me a case of cheapening the process in the open hearth at the expense of the rail mill.

Mr. Alexander.—It is the average. See the new rail mill, 17,364 tons we give credit for Rs. 43 a ton.

Mr. Mathias.—That is second class rails.

Mr. Alexander.—And the two other items are scrap 9,030 tons at Rs. 20 and 537 tons at Rs. 20 in the new rail mill. Now take the old rail mill 6,220 tons at Rs. 20 a ton, 118 tons at Rs. 20 and 2,448 at Rs. 42-15-0 a ton. Now if you turn to the open hearth, the scrap charged to the open hearth is 112,004 tons at Rs. 20, 9,902 at Rs. 20 and 2,080 at Rs. 29 a ton. That 2,080 is a mixture of the Rs. 20 and the Rs. 43 scrap. The scrap is all put back in the furnace.

The New Merchant Mill and the Old Bar Mill.

President.—I think there also we have only one year's full working. In the old bar mill the total works cost is 125·19 against 104·59 in the new, a difference of 20·6.

Mr. Alexander.—That is approximately the same as between the old and the new rail mills.

President.—The total gross metal charged in the old merchant mill is 2,628 lbs. as against 2,582 lbs. in the other.

Mr. Alexander.—The yields are nearly all the same—85·23 per cent. in the bar mill as against 86·77 per cent. in the merchant mill.

President.—Why should it be so?

Mr. Alexander.—It should be. It is low on the old mill on account of cobbles and scrap. It should be close together as it will be on the new rail mill and old rail mill this year.

President.—Here also the billets charged to the new mill are at the rate of Rs. 77-14-0 per ton and to the other at Rs. 73-9-5.

Mr. Alexander.—That is because the billets for the bar mill are rolled in the old blooming mill at a cost of Rs. 73-9-5.

Dr. Matthai.—Not entirely.

Mr. Alexander.—Some billets are brought from the new blooming mill but only a very small quantity, whereas the billets for the merchant mill in addition to going through the new blooming mill also go through the sheet bar and billet mill.

President.—There is one process added.

Mr. Alexander.—Yes. This charge to the merchant mill corresponds to the cost of the sheet bar and billet mill; at least it should, I don't know whether it does or it does not. The cost of the billets charged to the merchant

mill should be the same as the cost of the products on the sheet bar and billet mill.

Dr. Matthai.—There is only a difference of a few annas.

Mr. Alexander.—Rs. 73-3-4 against Rs. 73-9-5.

President.—I see that the old mill produces a little more scrap than the other mill. What is it due to?

Mr. Alexander.—The yield on the old bar mill is 85 per cent. Of the balance 15 per cent. approximately 13 per cent. is represented by scrap. The yield on the bar mill won't be much above 85 per cent. We expect on the other hand the merchant mill to yield up to 90 per cent. because it is a more improved and up to date mill.

President.—The nett metal charged in the old mill is Rs. 83·58 against the nett metal charged Rs. 87·42 in the new one.

Mr. Alexander.—That is on account of the higher price of billets.

President.—And the cost above material in the new mill is Rs. 17·17 against Rs. 41·61 in the other.

Mr. Alexander.—There is a difference of Rs. 24·44.

President.—Let us see how that comes about.

Mr. Alexander.—The same three items.

President.—Here also "fuel producer" gas is Rs. 5·98 in the old mill and the gas in the new is Rs. 1·03, the difference being Rs. 4·95.

Mr. Alexander.—That is coke oven gas. Part of the year we used coke oven gas and part of the year producer gas. We moved the gas producer to the soaking pits. Now we use coke oven gas only at the merchant mill.

President.—What is this producer gas used for?

Mr. Alexander.—For heating the billets.

President.—The biggest item is the total labour. In the old mill it is Rs. 14·44 against Rs. 6·66 in the new—a difference of Rs. 7·88. This is the highest labour figure of any you have given.

Mr. Alexander.—It is easily explained. It is not a modern mill.

President.—There is more manual labour in the old mill.

Mr. Peterson.—Yes.

President.—Then the next big item is steam which is Rs. 7·13. As against what?

Mr. Alexander.—For electric light and power it is Rs. ·68.

President.—Then there is a difference of Rs. 6·45.

Mr. Alexander.—The steam in the new merchant mill is Re. ·09.

President.—There is a big difference in the general works expense in the old mill—Rs. 2·55 against Rs. ·49, a difference of Rs. 2·06. I think it would be a good thing if you could send us a very short note on the allocation.

Mr. Alexander.—We can send you the allocation. They have charged 71,000 rupees against general works expense on the old bar mill and only 49,000 tons on the merchant mill. Yet the cost above in the two places is almost equal—Rs. 10 lakhs against Rs. 11 lakhs. I don't understand why it has been done like that.

President.—I take it that the allocation comes in the exhibits in each department.

Mr. Alexander.—Yes.

President.—What I would like you to do first of all is to find out whether you have made any alterations in the allocation since 1921-22.

Mr. Alexander.—What, I imagine, has happened is that they have not changed the allocation since the merchant mill was started. As it has gone up in tonnage, they have not altered the allocation.

Mr. Peterson.—They don't alter the allocation except once in 12 months.

President.—Does not the general works expense go up when the production goes up?

Mr. Alexander.—This is a question of allocating.

President.—What would be the result when the total production goes up?

Mr. Alexander.—It should bear a larger proportion of the general works expense.

Mr. Peterson.—They allocate these exhibits and they don't alter the allocation until the end of the year. The allocation will be based on the cost above metal for the preceding year and this year it will be altered on the 1st of April probably in accordance with the present figures.

President.—If you compare the previous year's output in the old bar mill with that of the merchant mill, it is 33,799 tons as against 19,690 tons in the merchant mill in 1924-25.

Mr. Alexander.—It would naturally get a higher proportion of the general works expense. It would not be altered for 12 months. It would probably be altered from the 1st April.

President.—In the previous year general works expense was Rs. 1·09 on an output of 19,690 tons in the merchant mill as against Rs. 2·07 on an output of 33,799 tons in the old bar mill.

Mr. Peterson.—We cannot alter from month to month. We must get the costs more or less regularly on the same system if we are to compare at all.

Dr. Matthai.—I take it that the allocated items refer to the previous year's output.

Mr. Alexander.—Yes.

President.—In order to make these comparisons, let us take 1925-26. It is no use going further back.

Mr. Alexander.—We never make that up for the year. We make it month by month.

Mr. Peterson.—We will give you individual allocations month by month for the year 1925-26.

President.—I think that would do. You change it every year.

Mr. Peterson.—Every year.

President.—Give us the allocation of the last months of the previous year.

Mr. Peterson.—Last months of 1924-25 and the allocation followed since then.

President.—The total output in this department on the old mill was 28,019, you lose on that output Rs. 6,86,000, at about Rs. 24-8-0 per ton.

Mr. Alexander.—Yes.

President.—That disposes of the old and the new plants. Let us take the rest of the new plant.

The New Plant: Sheet Bar and Billet Mill.

President.—The first items are the sheet bar and billet mills? There are the 24″ and 18″. Which is the sheet and which is billet mill?

Mr. Alexander.—Either and both. Steel goes through both the 24″ and 18″ mills for making sheet bars or billets.

President.—I think that here also you have had only one year's full working, is that not so?

Mr. Alexander.—Yes. Last year the output was 63,000 tons and this year 150,000 tons, nearly 2½ times as much.

President.—There again, the difference comes in the price of blooms. I think that in this case we will have to compare 1924-25 and 1925-26 to some extent.

Mr. Alexander.—The difference in the conversion cost is less than Rs. 2

President.—We will take the total works cost first. In 1924-25 it was Rs. 96·09 and in this year (*i.e.*, 1925-26) Rs. 77·76—a difference of Rs. 18·33. That is largely accounted for by the fact that the cost of steel blooms in 1924-25 was Rs. 84-7-6 and in 1925-26 Rs. 68-5-3.

Mr. Alexander.—The nett metal cost for 1925-26 is Rs. 72·56 as against Rs. 88·79—a difference of Rs. 16·23.

President.—The cost above metal is Rs. 7·30 in 1924-25 as against Rs. 5·20 in 1925-26—a difference of Rs. 2·1.

Mr. Alexander.—Yes.

President.—The difference is so small that I need not go into it. The largest difference is, I think, in labour which was Rs. 2·07 in 1924-25 as against Rs. 1·22 in 1925-26. The other thing is 'materials in repairs and maintenance' where the difference is Re. ·52 (Re. ·24 in 1925-26 and Re. ·76 in 1924-25).

Mr. Alexander.—Yes.

President.—Is this the mill where you make your tin bar?

Mr. Alexander.—Yes.

President.—The sheet bar is for your own use and the tin bar for the Tinplate Company of India.

Mr. Alexander.—Billets for the merchant mill sheet bar for our own sheet mill and tin bar for the Tinplate Company.

Dr. Matthai.—What is the difference between sheet bar and tin bar?

Mr. Alexander.—Nothing. We roll tin bar in our own sheet mill. We supply different sizes of tin bar to the Tinplate Company and on an average tin bar is lighter than sheet bar. As a matter of fact it could all be called sheet bar.

President.—Here when we get your new costs we shall be able to judge the results better.

Dr. Matthai.—I find that this is one of the few mills in regard to which your statements of labour show a considerable reduction in the wages per head per annum.

Mr. Alexander.—Yes, because the tonnage has increased nearly 2½ times.

Dr. Matthai.—Is it entirely due to that?

Mr. Alexander.—Yes.

Dr. Matthai.—The reduction of wages works out to somewhere about 10 to 12 per cent.

Mr. Alexander.—Yes.

The Plate Mill.

President.—In the three years, the production is more or less the same.

Mr. Alexander.—Yes.

President.—In the plate mill your best year was 1923-24 for cost above metal as well as for yield.

Mr. Alexander.—It is all nearly explained in the yield.

President.—There has been a steady decline in the matter of yield. In 1923-24 it was 73·84 per cent. You went down to 72·80 per cent. in the following year and last year to 68·17 per cent.

Mr. Alexander.—Unfortunately we discovered about January 1925 that the Superintendent we had on the plate mill had not kept proper check on stocks and according to our books we had 1,200 tons of plates which we actually did not have. Consequently, we had to deduct 100 tons a month from the production during the entire year in order to square up our stocks. If we had included the 1,200 tons in the production, the yield would have been 73 per cent.

President.—That is all right in that case. There has been some increase in scrap.

Mr. Alexander.—The yield may vary one or two per cent. It depends on the kind of orders we get.

President.—Take the total cost in 1923-24. I want to compare 1923-24 and 1925-26 because as far as I can see 1923-24 was your best year. There has been a little deterioration somewhere. The total cost in 1923-24 was Rs. 142·13 and the nett metal charged was Rs. 115·27. The cost above nett metal in that year was Rs. 26·86 whereas in 1925-26 the total works cost was Rs. 124·53 the nett metal charged was Rs. 94·10 and costs above metal 30·23.

Mr. Alexander.—Rs. 125 this year.

President.—The difference in the cost above nett metal was Rs. 3·37. You are worse off in the cost above by Rs. 3·37 than before.

President.—Then, fuel came to Re. ·32 in the earlier year as against Rs. 2·50 in the later year—a difference of Rs. 2·18.

Mr. Alexander.—We allocated a higher proportion of the coke oven gas in the meantime and also on account of the shortage of fuel, we were using fuel oil.

President.—You used coke oven gas and fuel oil.

Mr. Alexander.—Yes.

President.—You ran short of gas or what?

Mr. Alexander.—We did not have coke oven gas enough for our soaking pits. We wanted to put coke oven gas on the merchant mill and we had to take it off the plate mill.

President.—Why did you punish the plate mill?

Mr. Alexander.—We wanted the gas producer on the soaking pits.

President.—Are your burners convertible?

Mr. Alexander.—Yes, either gas or oil.

President.—Labour also went up from Rs. 10·47 to Rs. 11·50, a difference of Re. 1·03.

Mr. Alexander.—On account of rolling a bigger proportion of wagon plates. In 1923-24 we did not roll any or if we did roll, we rolled very few wagon plates.

President.—Are they thinner?

Mr. Alexander.—They are thinner and more difficult to finish.

President.—Then, steam also went up from Rs. 1·54 in the previous year to Rs. 3·27 in 1925-26.

Mr. Alexander.—I cannot answer that. There has evidently been a re-allocation.

President.—That is due to some change in the allocation, is it?

Mr. Alexander.—Yes.

President.—That makes a difference of Rs. 5. There are also small economies, so small that I do not wish to go into them in detail. You save some Rs. 2 somewhere and spend Rs. 5 more elsewhere.

Mr. Alexander.—The items "Materials in Repairs and Maintenance" and "Tools, Lubricants and Miscellaneous supplies" show a reduction from Rs. 6·35 to Rs. 5·04—a reduction of nearly Re. 1-8-0.

President.—There is not much in that. The only thing of course is the yield which you have already explained.

Dr. Matthai.—Where do you get your slabs from?

Mr. Alexander.—From the new blooming mill.

Dr. Matthai.—The costs do not correspond.

Mr. Alexander.—In 1923-24 I think you will find that the majority of slabs came from the old blooming mill. It has been gradually decreasing year by year until at least 95 per cent. of the slabs now come from the new blooming mill, so that it is again an average cost between the two on a tonnage basis.

Dr. Matthai.—I find that the total labour cost on this mill is the highest next to the bar mill.

Mr. Alexander.—And also the sheet mill?

Dr. Matthai.—Leave the sheet mill alone which is a class apart.

Mr. Alexander.—The tonnage per man is so much lower.

President.—What is the full capacity of this plate mill?

Mr. Alexander.—100,000 tons.

President.—You are working only one fifth of your capacity?

Mr. Alexander.—Yes.

Dr. Matthai.—Can you explain to me the note about direct labour on the plate mill? As compared with 1924-25, you show an increase in 1925-26 of 59 hands but these men were employed in the plate mill for half the time, was that the idea?

Mr. Alexander.—The Sleeper Plant was only operating part time but the men were engaged full time. When the Sleeper Plant was not working they were employed on the plate mill. We could not discharge them.

Dr. Matthai.—I find there is a slight reduction in wages per head per annum. (Statement No. 82.) Of course it is very slight but the principle you gave earlier in the day does not account for it. If you take 1923 figure you will find the wages per head per annum almost the same as the 1925 figure, whereas the output in 1923 was somewhere about 2,000 tons higher. Look at the original statement that you had been discussing with the President on the plate mill costs (No. 32). The 1923 figure for output is 22,000 tons, that for 1925 is 20,000 tons. The rate of wages per head per annum is the same. If you take the 1924 figure where the output is 2,000 tons less than in 1925, you will find the wages slightly higher. It does not square absolutely with your theory.

Mr. Alexander.—You are mixing up wages with tonnage. There is no connection between the two. You may have a large percentage of highly paid or low paid people. The tonnage has nothing to do with it.

Dr. Matthai.—I don't quite follow.

Mr. Alexander.—Wages per head per annum have nothing to do with tonnage.

Dr. Matthai.—Wherever you show a reduction in wages in these statements you said that must be accounted for entirely on the basis of bonus earned by people on account of increased output?

Mr. Alexander.—There is no bonus at all here.

Dr. Matthai.—Then how do you account for the reduction in 1925 as compared with 1924?

Mr. Alexander.—Higher percentage of low paid people I suppose. That is what has actually happened because on the finishing of these wagon plates we had to put on a number of coolies at a low rate of pay, for handling the plates.

Black Sheets.

President.—Let us take Black Sheet. Here of course you have gone hopelessly wrong in your original estimate of Rs. 149 of the total works costs. The output of 1924-25 is very small, only 5,735 tons against 28,652 tons in 1925-26. There is a slight improvement in the yield which was 78·17 in 1924-25 against 81·39 in 1925-26.

Mr. Alexander.—81·39 is a little too high, the same as in the plate mill. Theoretically the yield on the sheet mill should be 80 per cent. It is about 1 or 1¼ per cent. too high in 1925-26.

President.—It is too high in this case, in the other too low.

Mr. Alexander.—That was the first year of starting.

President.—The total works cost in the previous year was 203·90 against 181·16, that is a difference of 22·74. That is very largely accounted for by the difference in the cost of metal which was 105·29 in 1924-25 against 92·48 in 1925-26.

Mr. Alexander.—That is so.

President.—Then the above metal charge is 98·61 against 88·68 a difference of 9·93. That is almost wholly accounted for by two things. The first is your labour cost. It was 62·14 against 53·06 which accounts for 9·08. What is that due to?

Mr. Alexander.—Increase of tonnage.

President.—I think there was a large reduction in covenanted labour.

Mr. Alexander.—Not so much in 1925. Since then there has been a big reduction.

President.—It was in the number of the men that you brought out?

Mr. Alexander.—Yes.

President.—And you have got rid of a good many of them?

Mr. Alexander.—With the Superintendent there were 66 originally.

Dr. Matthai.—How many have you got now?

Mr. Alexander.—Only 28.

Dr. Matthai.—That would mean a big reduction in the labour costs.

President.—The next big item is contingent fund, 10·26 against 6·60, a difference of 3·66. What is this contingent fund? Is it the fund for passages, salaries, leave allowances and things of that sort?

Mr. Alexander.—That is a provision made against these, but it is adjusted on the results of each year. It would be explained by the tonnage.

President.—This difference is set off to some extent by a rise in the general works expense from ·69 to 2·87.

Mr. Alexander.—Because the operating cost was so much higher. The higher the operating cost the higher the proportion of works expense.

President.—This accounts for 2·18 and more or less brings the difference to 9·93.

Dr. Matthai.—If you look at the statement of Black Sheet 1924-25 the figure for the cost of sheet bar is 86 and odd and if you look at the statement showing the cost of the Sheet Bar and Billet Mill (Statement No. 41) in 1924-25 the cost is Rs. 96. I find that both these figures occur in the cost statements also. I would like to have that point cleared up.

Mr. Alexander.—We will look into it and let you know.

Dr. Matthai.—There is another point I want to be clear about. In the printed statement (Statement 34) you should have given figures for the estimated cost of annealing. There is nothing given in the statement.

Mr. Alexander.—We do not keep that separately. It all comes in under labour and repairs.

Dr. Matthai.—A certain amount of annealing is done, is it not, with regard to these sheets?

Mr. Alexander.—Every sheet is annealed but the cost is distributed elsewhere.

Dr. Matthai.—How much does that amount to? In a letter to the Commerce Department, dated 24th December 1925, you raised the point about cold rolled sheets and said that annealing is done in respect of all sheets sold in the bazar and that all the sheets that you manufacture for sale are annealed, and therefore the extent to which annealing will increase your cost is rather an important point.

Mr. Alexander.—We will give you an estimate.

Dr. Matthai.—There is one interesting point with regard to these figures. The difference between your estimated figure of the total cost and your 1925 cost is precisely the difference between your estimated labour cost and your actual labour in 1925. It comes to exactly Rs. 32. It has no significance, has it?

Mr. Alexander.—No.

Mr. Peterson.—As regards the difference in the costs of the sheet bars as shown in statements Nos. 30 and 34, the cost given in statement No. 30 is the cost for the entire year. Statement No. 34 only refers to the sheet mill which has been running for six months. Therefore we took the actual costs from September to March 1924-25. The sheet mill didn't start work till September 1924.

Plain Galvanized Sheets.

President.—You had a very small output in the year 1924-25. It was only 2,099 tons in 1924-25 and 12,653 tons in 1925-26. What I was suggesting to you before lunch was that I would like to separate the metal raw material, by which I mean, black sheets from the other raw materials.

Mr. Alexander.—Yes.

President.—Are these galvanized bands part of the metal or are they part of the other raw materials?

Mr. Alexander.—Whichever way you prefer it.

President.—What are these galvanized bands?

Mr. Alexander.—They are made for the purpose of bundling up the sheets.

Mr. Peterson.—They are a finished product.

President.—You cannot call it as metal raw materials. It is some accessory to the finished product. What I want to do is to see how much your metal costs then how much the other materials cost and then I will take the cost above.

Mr. Alexander.—Are you speaking of plain galvanized or corrugated?

President.—Plain.

Mr. Alexander.—The cost above metal is Rs. 38.

President.—What I mean to say is that part which you call the metal part, contains a lot of things which are purely raw materials either imported or indigenous, and I want to see how much of these raw materials you use per ton and whether they come to a very large amount. Take the black sheets in 1924-25. They come to Rs. 193·87. Then we deduct the scrap that you recover.

Mr. Alexander.—Do you mean sheet scrap? It is not scrap in the same sense that it is a scrap in the other mills. We put in Rs. 98 worth of spelter and got a credit of Rs. 16·76 for zinc dross.

Dr. Matthai.—May I know the whole of your credit?

Mr. Alexander.—Zinc dross and zinc ashes, Rs. 16·76 *plus* Re. ·09 or Rs. 16·85.

President.—Has it got to be deducted from the spelter?

Mr. Alexander.—That is deducted from the spelter.

President.—We will have to do it that way.

Mr. Alexander.—The spelter charge was Rs. 98·91 less Rs. 16·85.

President.—We will take the black sheets separately. The next thing is spelter. Spelter in 1924-25 is Rs. 91·08. From that you deduct Rs. 10·72. That leaves Rs. 80·36. In the other case you deduct from Rs. 98·91, Rs. 16·85. That leaves you Rs. 82·06. Then you have got other materials which we need not go into in detail. The total of these materials for 1924-25 is Rs. 96·09, altogether against Rs. 98·02 in 1925-26. All these are imported articles—spelter, lead, tin and galvanized bands?

Mr. Alexander.—We don't use any lead.

President.—You used it once last year.

Mr. Alexander.—That was for experimental purposes. The galvanized bands won't be imported.

President.—You pay duty on spelter.

Mr. Alexander.—Yes, that is the only thing.

President.—What was the duty on it?

Mr. Peterson.—15 per cent. *ad valorem* on a tariff valuation of Rs. 25 a cwt.

President.—We will take it on this actual amount. On each ton there is a duty of about Rs. 5 on spelter.

Mr. Alexander.—Per ton of sheets. The actual price quoted is higher than the duty price of Rs. 25 per cwt.

President.—Does it work out to a bigger figure?

Mr. Alexander.—It works out to Rs. 8-8-0 per ton of sheets.

President.—What is the sulphuric acid used for?

Mr. Alexander.—That is for pickling.

President.—What is sal ammoniac used for?

Mr. Alexander.—It is a flux. It is put on to clean the sheets.

President.—The total cost of metal materials is Rs. 289·96 in 1924-25 as against Rs. 271·73. The total works costs in 1924-25 were 332·09 and in 1925-26, Rs. 298·88 in 1925-26, and therefore the cost above material is Rs. 42·13 as against Rs. 27·15. That is really the cost above material in these figures.

Mr. Alexander.—Yes.

President.—They are imported. They are not manufactured locally. Of course we don't know whether you are using too much or too little.

Mr. Alexander.—We know we are using too much.

President.—It looks a bit too high.

Mr. Alexander.—Instead of 260 lbs. (341 lbs. *minus* 81 lbs.), it should be 220. We are using 40 lbs. too much per ton.

President.—What is it due to? Is it due to want of practice?

Mr. Alexander.—It is due to the initial operation of the plant.

President.—The difference in the two is very largely accounted for, by the difference in coke and coal and labour and coke and coal was Rs. 2·72 before and it is now Rs. 1·34 and labour is very high.

Mr. Alexander.—Rs. 10 more there.

President.—Is it due largely to the output being small?

Mr. Alexander.—In April it was down and it would be still further down in May 1926.

President.—Is the output affected by climatic conditions in this department?

Mr. Alexander.—No. The output is affected due to the starting up of the department.

President.—The next big item is the contingent fund, Rs. 4·84 against Rs. 1·96.

Mr. Alexander.—The drop in plain galvanized sheets is due to the same cause as in the case of black sheets. That can be accounted for by tonnage.

President.—It is very hard to judge as to what is going to happen about these galvanized sheets as to costs and so on. We can't go on this very short experience of yours?

Mr. Alexander.—No.

President.—Nor can you give us any estimate?

Mr. Alexander.—I have given an estimate for the completed plant I have taken labour at Rs. 40 a ton.

President.—So much must depend on practice in this particular thing.

Mr. Alexander.—Yes.

President.—Because there is more manual labour here than elsewhere.

Mr. Peterson.—The original selection of men was unhappy. We did not get the right type of men. Many of them were unsuitable, so they were sent off. We have trained Indians whom we find just as well qualified on much

lower pay. We are pretty certain that we will get as good results as the Tinplate Company with Indian labour.

President.—Anyhow the Tinplate people have trained their men.

Mr. Peterson.—They have trained their men and we will get the same efficiency too.

Mr. Alexander.—The Tinplate people were fortunate in getting out a better class of men in the first instance than we did. It will take us another two years to come up to the same efficiency.

President.—In the case of galvanized sheets it would not serve any practical purpose to go by actual costs, that is the difficulty.

Mr. Peterson.—We have not got near our final costs yet.

President.—We may have to adopt some rough and ready method to arrive at the future cost. These costs are no indication at all.

Mr. Alexander.—Our costs are no indication of what we should do. Our mill has been running only for the last 18 or 19 months.

President.—I confess I find a lot of difficulty in this.

Dr. Matthai.—If you look up Statement No. 49, you will find that the total quantity of black sheet that you use per ton is 2,131 lbs. Along with that you use 341 lbs. of spelter. Out of that you get 2,240 lbs. of galvanized sheet.

Mr. Alexander.—Yes.

Dr. Matthai.—There is no wastage as far as the metal cost or black sheet is concerned. What I am trying to get at is this. If you take 2,240 lbs. and deduct from that 2,131 lbs. which is the amount of black sheet in it, the balance of the weight is 109 lbs. which is the spelter, I suppose, absorbed in the sheet.

Mr. Alexander.—They have not put the credit for spelter here. They have given 341 lbs. the same as in the cost sheet, but they have not deducted 81 lbs.

Dr. Matthai.—I am making allowance for that. I have listened to your explanation. What I want to get at is this. If you take the whole of 341 lbs. and deduct from it 109 lbs., you get 232 lbs. Out of that if you deduct 81 lbs. you get a final balance of 151 lbs. of spelter. Is it thrown away?

Mr. Alexander.—It would be difficult to say off hand. We will look into it and let you know later.

Dr. Matthai.—Is the dross sold to local people?

Mr. Alexander.—Yes. We get 75 to 80 per cent. value of the spelter for the dross.

Dr. Matthai.—There is no difficulty at all about getting it sold.

Mr. Alexander.—No.

Corrugated Galvanized Sheets.

President.—Here also the production is very small. In 1924-25, it was only 1,865 tons as against 10,291 tons in 1925-26. The total works cost in 1924-25 was Rs. 357·48 as against Rs. 314·19 and the cost above metal was Rs. 24·18 as against Rs. 15·40 in 1925-26. There is a big drop in the works cost but that is very largely accounted for by the drop in the cost of the gross metal charged.

Mr. Alexander.—Yes.

President.—The labour cost of Rs. 9·87 in 1925-26 seems fairly high, though there is a drop compared to the previous year. Does not the process consist mainly of pressing the sheets?

Mr. Alexander.—It is on account of two or three covenanted men getting about Rs. 1,000 a month. It is a small tonnage. The covenanted staff alone make Rs. 36,000 a year. Their pay alone comes to Rs. 3-8-0 a ton.

President.—Why do you have these men then?

Mr. Alexander.—We don't have them now.

President.—It seems to me to be a very simple process.

Mr. Alexander.—We had to have them for a year or so to train the Indians.

President.—Then there is a slight economy in the other charges which dropped from Rs. 6·81 to Rs. 5·83. These costs must come down a good deal. It seems to me that the allocation is probably high.

Mr. Alexander.—It is so because the tonnage is small. This again brings us back to the question of the cost of operating the department. Each department has to stand its share of the total general works expense.

President.—It is much higher here than in the other mills.

Mr. Alexander.—That is right.

President.—Why should it be so?

Mr. Alexander.—First of all we have the cost of operating the department. The general works expense for all departments is so much and each department has to stand its share.

President.—Applying a principle like that to a process which is so simple, you are simply overburdening the costs. I suggest that this method should be looked into.

Mr. Alexander.—What it comes down to is that the highest priced commodity stands the highest proportion of the general expense.

President.—As an illustration of that principle, I think it is a very bad one.

Mr. Peterson.—We have written to England and America and we find that they are doing the same thing there.

President.—The actual service you do to this department is so small that it ought to be debited with very little for it.

Mr. Alexander.—The general works expense is 1·69. Take the sheet bar and billet mill. It is ·24 per ton because in that mill it is so much cheaper to operate per ton of product. The general works expense in the sheet bar and billet mill is Rs. 35,902 and for galvanized sheets Rs. 17,364 and the total service and expenses in the sheet bar and billet mill is Rs. 7,82,453 and in the galvanized is Rs. 4,86,279.

President.—It may be very convenient to allocate the cost in that way but where the process is a very simple one and it really does not cost you much, I don't think you ought to burden that department with such heavy overhead cost.

Mr. Alexander.—We wrote to England and America to find out what they were doing there. In several plants they were doing the same thing.

President.—Change the allocation in this particular instance.

Mr. Peterson.—If we were to make constant changes in the system it would be very difficult to compare results.

President.—You see, in determining the amount of protection we have got to decide what ought to be the reasonable cost.

Mr. Alexander.—It is only a rupee out of a cost of Rs. 314.

President.—It is more than that, about Rs. 5.

Mr. Peterson.—It is about one or two per cent.

President.—Then let us take materials in repairs and maintenance.

Mr. Alexander.—The first two items are direct charges.

President.—Let us take them from steam downwards then.

Mr. Alexander.—A rupee for electricity, light and power.

President.—I am just putting it to you that in a thing like this . . . .

Mr. Alexander.—It is only the general works expense that enters in it and we would not gain more than a rupee there at the most.

President.—I am simply trying to point out to you that the process is so simple that all this cost of Rs. 15 for simply pressing the material is a great deal too high.

Mr. Alexander.—75 per cent. of that is used in the department itself. The power charged is used in the department itself. It is not a question of allocation there. It is a question of measuring the K. W.

President.—Perhaps when we inspect the plant we may be able to form a better opinion.

Mr. Peterson.—There is more than pressing here. There is the building and crating of the sheets, loading and despatching. That is all in the labour. There is a separate head for corrugating.

Mr. Alexander.—Labour cost per ton for putting the corrugations in the sheet is Rs. 3-8-0.

President.—When the cost of corrugating is only 3·52, you put this 5·43 on top of that.

Mr. Alexander.—But you have to put them in bundles, put clips round them, stock them, and when an order is received take them from stock and put them into wagons. All these things come into this.

Mr. Mathias.—I take it you expect the outturn to be very much larger in the near future?

Mr. Alexander.—With the present mills we expect an output of 36,000 tons of black sheet a year as against 28,000 tons.

Mr. Mathias.—And these galvanized corrugated sheets?

Mr. Alexander.—Plain galvanized sheets will be roughly 80 per cent. of the black sheets.

Mr. Mathias.—So that you expect in the near future a very considerable increase, do you not?

Mr. Alexander.—It will take another two years yet.

Mr. Mathias.—And the cost will be reduced? You expect in the next year also a large reduction in the cost?

Mr. Alexander.—Yes.

The Sleeper Plant.

President.—We now come to the Sleeper Plant. In this plant the output is very small, only 1,773 tons.

Mr. Alexander.—It is more or less experimental. It really remained experimental because the Indian railways would not agree to one pattern of sleepers. We have only supplied one railway.

President.—There also we find the same thing. This I take it is a fairly simple process once you have got the pattern. After that it is simply pressing and cutting out.

Mr. Alexander.—That is so.

President.—Your total nett metal charge is 86·97?

Mr. Alexander.—That is on account of the big credit for second class sleepers.

President.—The cost above nett metal comes to 32·45? There also the cost appears somewhat excessive.

Mr. Alexander.—No. Labour is Rs. 14.

President.—Is it not very high?

Mr. Alexander.—Because the tonnage is small. We were operating three days a week on the average for about six months taking the year in question. The sleeper plant did not operate more than 50 per cent. of the time while the staff had to be kept on 100 per cent. of the time. Then again it operated only 25 per cent. of its capacity. We can get four or five times what we are getting at present.

President.—That is perfectly true, but what I mean is that these costs do not guide us anywhere. To my mind it is a very simple process and should not involve such a heavy expenditure as Rs. 32 a ton.

Mr. Alexander.—It would not be heavy. If the demand were large we could put in additional plant and make 25,000 tons easy and we have made only 1,773 tons.

Mr. Peterson.—No railway would accept the pattern except the Bombay, Baroda and Central India.

President.—What is the price of wooden sleepers?

Mr. Alexander.—About Rs. 8 per sleeper. We are using second class sleepers in our works and crediting them at Rs. 5.

Mr. Mathias.—Wooden sleepers are a little cheaper than your steel sleepers?

Mr. Alexander.—But their life is not so long.

Mr. Mathias.—The railways are, I think, investigating the question of the best kind of sleepers?

Mr. Peterson.—In the case of cast iron sleepers the scrap value is much higher than the scrap value of steel sleepers. The railway people also do not like the pressed up lugs in the steel sleepers of our pattern.

Mr. Alexander.—In some districts there is too much corrosion. The saltpetre in the soil corrodes these sleepers.

Mr. Peterson.—We have shut the plant down now. We are not going to make any more steel sleepers. If protection is given and the railway people do not buy pressed steel sleepers we won't make them.

President.—But protection may send up the price of other sleepers.

Mr. Peterson.—We are only asking for protection in the shape of a bounty to the Indian manufacturer. It will not operate if we don't get orders.

President.—The wooden sleeper may be a substitute for the steel sleeper. If you increase the cost of the steel sleeper naturally the cost of the other rises.

Mr. Alexander.—No, because the cast iron sleeper will keep the prices down. There are several other alternatives.

Dr. Matthai.—Is cast iron sleeper cheaper than wooden sleeper?

Mr. Peterson.—The cast iron sleeper is dearer than the wooden sleepers but its life is very high. It consists of two parts, two castings with a bar in between. The castings even when the sleeper is worn out will always command the price of pig iron. They don't rust or corrode.

Dr. Matthai.—What is the price?

Mr. Peterson.—The price of the cast iron sleeper is slightly lower than steel sleepers. The North Western Railway ordered a large quantity from the Bengal Iron Company. They can give you the price. The railway people will be able to give you the information.

Mr. Mathias.—Have they any other kind of cast iron sleepers?

Mr. Peterson.—They have several different patterns.

President.—Once you have got the pattern it is a simple process, is it not, just like the corrugated sheet?

Mr. Peterson.—Yes. From our point of view we would make pressed steel sleepers provided we get orders for one type and for large quantities.

President.—What I want to put to you is that even so the cost of Rs. 32·45 for pressing steel into sleepers is too high.

Mr. Alexander.—The cost per ton will come down when production increases.

President.—Well, I think we cannot go further than this into this question at present.

Mr. Peterson.—So far as we are concerned the position is this. The agreements for pressed steel sleepers provide that the railways will take all their requirements of steel sleepers for six years at Rs. 8-8-0 per sleeper f.o.r. Tatanagar for broad gauge sleepers. Subsequently the railways have for the most part adopted different types of sleepers and are not now prepared to

adopt a standard sleeper. If they did take all their requirements from us that would affect the protection given to us; as we should have to supply coal we would lose it on that quantity of steel. Our position regarding the manufacture of steel sleepers is exactly similar to what our rail position was when the Board published their first report in 1924.

President.—Have not these agreements expired?

Mr. Peterson.—They don't begin until we commence delivery and the railways have not yet decided on the pattern.

Mr. Mathias.—Is it a fixed price?

Mr. Peterson.—Yes. It is exactly the same position as in the case of the Palmer Railways. The price is fixed for a number of years.

President.—Is it not better to leave sleepers alone for the moment?

Mr. Peterson.—I only point out to the Board that sleepers should come under the scheme of protection if the railways take these sleepers from us.

President.—Do not sleepers form part of fabricated steel?

Mr. Peterson.—There is a special entry for it in the Tariff schedule under railway materials.

President.—It is a form of fabricated steel.

Mr. Peterson.—It would be fabricated steel.

Mr. Alexander.—Fabricated steel according to my way of thinking has riveting done on it. These sleepers are pressed and there is no riveting.

Mr. Peterson.—In the first enquiry we asked for protection and a bounty for sleepers and they were excluded by the Board on the ground that we were not able to make them then. Now we are able to make them and therefore the same principle should be applied as was applied in the case of rails. If the railways are not going to use them, the question doesn't arise.

President.—Supposing protection didn't take the form of bounties?

Mr. Peterson.—It would be no use to us so far as the Palmer Railways are concerned. That is why we suggested a bounty. But we are not under contract with the Government railways.

Mr. Mathias.—Your selling price is about Rs. 125, so that your contract is with the railways, is it?

Mr. Peterson.—It is a contract with the Palmer railways, Rs. 8-8-0 a sleeper and 15 sleepers per ton.

President.—If we put a duty on sleepers, there would be no inducement to railways to place orders with you.

Mr. Peterson.—We don't ask for a duty.

Dr. Matthai.—With whom are these contracts made?

Mr. Peterson.—The same Palmer Railways to whom we supplied rails. The difficulty of our position with these contracts is that we don't know whether they are going to take these from us or not.

Dr. Matthai.—Does it form part of the original contract?

Mr. Peterson.—Yes, it was deferred until we were able to supply.

President.—Would it not be better for you to find out from them what they are going to do instead of our going into this question and finding in the end that they are not going to use them?

Mr. Peterson.—They don't know themselves.

President.—Have you offered to deliver them?

Mr. Peterson.—We have delivered in one or two cases. The Bengal Nagpur Railway with whom we have contracts have adopted another pattern of sleepers.

President.—Can they now compel you to deliver under those conditions?

Mr. Peterson.—They could compel us to deliver according to the original pattern, and we could also compel them to take provided they use steel

sleepers at all. If we tried to compel them, they would use either wooden sleepers or cast iron sleepers.

President.—What is the cost of the pressed sleeper plant? Is it expensive?

Mr. Peterson.—It did not cost very much.

President.—About a couple of lakhs.

Mr. Peterson.—Rs. 2½ lakhs, I think.

President.—It is better that this question be left over until the railways make up their mind. They cannot pay you as it is.

Mr. Peterson.—We are not very anxious to make pressed sleepers except as an outlet for our steel.

President.—Until you have, as a matter of fact, your further extensions, you have not enough steel.

Mr. Peterson.—Provided the rail orders come to us, we have not enough steel.

President.—That question is not an immediate question.

Mr. Peterson.—It might at any time become an immediate question.

President.—I think we must leave it at that.

Mr. Mathias.—Do not your commitments to the various railways amount to something very big?

Mr. Peterson.—Our commitments might amount to anything up to the full demand of particular railways. I don't suppose they will ever demand that quantity. The same principle applies to both sleepers and plates for wagons. If the Indian railways are going to use sleepers, they ought to get them manufactured in India. They can be manufactured in India, if they decide on one pattern.

Dr. Matthai.—All the information about these contracts is given in your statement.

Mr. Peterson.—The contracts were mentioned in the First Report. I don't think we have given you a statement of contracts this time. We can very easily give you a copy of the contract.

Dr. Matthai.—I think railway contracts we probably asked you to drop.

Mr. Peterson.—You did. The simplest thing for us to do is to send you a copy of the contract for sleepers. Nothing has been done so far. It is now seven years since it was executed.

Mr. Mathias.—Could you give me any idea as to what you are getting for the sleepers you actually turn out?

Mr. Peterson.—Rs. 124.

Mr. Mathias.—You are not making much out of it.

Mr. Peterson.—No. In this particular case I shall explain. At one time we asked the Bombay, Baroda and Central India whether they wanted any. Then we changed our mind. They made a grievance of it and said: "We have found it very difficult to order from England. We must have the sleepers." We therefore made these in order to avoid putting them into great trouble.

Dr. Matthai.—The statement represents the result of two months' working of the sleeper plant.

Mr. Peterson.—It is one year off and on.

Dr. Matthai.—When did it start?

Mr. Peterson.—April 1925.

President.—In the previous enquiry you did not say much about sleepers.

Mr. Peterson.—The plant was not erected at the time of that enquiry.

Dr. Matthai.—Where is it erected?

Mr. Peterson.—Near the sheet bar and billet mill.

Tools.

President.—The only thing that remains are the tools. I don't think I shall take them up now.

Mr. Peterson.—I suggest that the Board should see the factory, which has been put on a fresh footing since we took it over.

President.—We have been round it. It is very difficult to go into the question of costs and I have to consider how I can do it.

Mr. Peterson.—It is not easy.

President.—Then I was wondering whether I should go into the question of the estimate of your future costs now or we must wait until we have some more results. We have nothing to go upon just now.

Mr. Peterson.—Excepting last year's costs.

President.—I was thinking that we might wait until we get these figures for the next few months. I should like to compare them even if you got 3 or 4 months' figures. It would be much better if we waited. At present it would be more or less guess work.

President.—There is a drop in your works cost judging by March figures.

Mr. Peterson.—That is mainly due to the drop in the price of coal.

Mr. Mathias.—The price will be reduced still further, won't it?

Mr. Peterson.—The nett drop in the price of coking and steam coal will only be about Rs. 1-8-0.

Mr. Mathias.—I thought if the railway's contract price dropped in April, your price would be regulated accordingly.

Mr. Peterson.—Some of our contracts ended in January and some of the advantage in price has already come in.

Mr. Alexander.—We got some advantage in February, some in March and more in April.

President.—I think when Mr. Mather comes, he will be able to bring us some costs. At one time it seemed to me that it would be simpler to take the cost of coal, pig iron and so on and make some deduction as to your future costs and eliminate, for instance, the amount that you lose at present by having the old plant.

Mr. Mathias.—Are your estimates based on that?

Mr. Alexander.—Based on increasing the tonnage and shutting down the old mill.

President.—If you separate the amount of money spent on the old mills in excess of that spent in the new mill, we may get some idea of what the cost is going to be like when the whole plant is renovated. Then we will have to take the price of coal and make some allowance for the increased output, but I think we would leave that for the present.

(Continued on 16th June 1926.)

Review of the Plant as a whole apart from the question of works costs.

President.—As regards the exhibits and the question of allocation, I have not been able to examine them fully, but I think that we can find the allocation from them. I think that we can without much difficulty find out the annual allocation from these exhibits. You have got all the exhibits, you have got the amount spent on each item and you have got the amount allocated to each item. It is a matter of mere arithmetic. Will you get it done for three years 1916-17, 1921-22 and 1925-26? I would like these figures to be worked out by the applicants themselves.

Mr. Peterson.—I shall have it calculated for you this afternoon.

President.—I want the figures worked out for coal consumption also for these three years, I have not got the figures for 1916-17.

Mr. Peterson.—Do you want the coal consumption in each particular department?

President.—No, the total coal consumption. You have given coal consumption for each year and your estimates for 1933-34.

Mr. Peterson.—Do you want it per ton of finished product?

President.—Yes.

Mr. Peterson.—Which would include pig iron?

President.—As regards pig iron I propose to take two tons of pig iron as being equal to one ton of steel. You will have to convert the surplus pig iron into steel.

Mr. Peterson.—There is a certain amount of coal used for other purposes.

President.—First of all, you have got to get the total tonnage for finished steel.

Mr. Peterson.—And the total consumption of coal per ton of finished steel, which is not in any of these statements.

President.—You have given the total consumption of coal for 1921-22 and 1925-26.

Mr. Peterson.—That is the total consumption of the entire works. But I will try and work it out for you.

President.—I want now to review the plant as a whole apart from the question of works cost. Let us take the coke ovens first.

The Coke Ovens.

Now you have got only the Koppers and the Wilputte ovens.

Mr. Alexander.—Yes.

President.—Koppers ovens, how many years old are they?

Mr. Alexander.—9 years.

President.—After about 9 years, you require a certain amount of renovation, don't you?

Mr. Alexander.—Major repairs.

President.—Will they then be as good as before?

Mr. Alexander.—Not exactly so, but 90 per cent. as good.

President.—What do you consider the life of ovens?

Mr. Alexander.—Without repair or what?

President.—Reasonably speaking how many years after would you consider that they had done their work?

Mr. Alexander.—20 to 25 years. After 25 years they are obsolete.

President.—Owing to the change probably in the processes.

Mr. Alexander.—Yes.

President.—But apart from the question of change in the process?

Mr. Alexander.—If you repair them every 7 to 10 years, they will last 100 years.

President.—What is the full capacity of these Koppers ovens? You have got only one battery, I take it, of these ovens.

Mr. Alexander.—Yes, one battery of 50 ovens.

President.—What is the full capacity and have you attained the full capacity?

Mr. Alexander.—About 11,000 tons a month.

Dr. Matthai.—That is your present output.

Mr. Alexander.—Last year's output was 11,000 tons a month.

Dr. Matthai.—In 1925-26 it was 11,000 tons a month.

Mr. Alexander.—Yes, but this year it will be less than that on account of the repair work.

Dr. Matthai.—It is now working to capacity, is it not?

Mr. Alexander.—Last year it was; this year it is not.

President.—In your opinion, since we enquired last the Koppers ovens have not deteriorated to any great extent.

Mr. Alexander.—No. What we are doing now is giving them a general overhauling. We are not going to do anything more till the 4th battery of Wilputte coke ovens is put into operation. It may be 4 or 5 years from now when we may have to do overhauling again.

Dr. Matthai.—That is on the Koppers ovens.

Mr. Alexander.—Yes.

Dr. Matthai.—When was the last overhauling done?

Mr. Alexander.—None at all. There has been none since the beginning.

President.—As regards the Wilputte ovens, how many batteries are there?

Mr. Alexander.—3 batteries of 50 ovens each.

President.—What is the full capacity of each battery?

Mr. Alexander.—We have not reached that yet.

President.—I am asking you about the full capacity.

Mr. Alexander.—I put the full capacity at 64,000 tons a month for 4 batteries.

President.—That is 16,000 tons for each.

Mr. Alexander.—Yes, per battery.

President.—It is 5,000 tons better than the other (that is the Koppers ovens).

Mr. Alexander.—Yes.

Dr. Matthai.—Is 64,000 tons for 3 or 4 batteries?

Mr. Alexander.—4 batteries.

President.—Is the initial cost of the Wilputte ovens bigger than that of Koppers ovens?

Mr. Alexander.—They were built in different times. Koppers ovens were built in 1915-16 and put into operation in 1917.

President.—Apart from the date of construction, would the initial cost be in the same proportion?

Mr. Alexander.—The batteries themselves, yes. But we have the additional coal and coke handling equipment.

President.—Will the initial cost of the Wilputte ovens be more but that the operating cost be lower by reason of the fact that they are better equipped?

Mr. Alexander.—Let me clear this point. If we were to build another battery of Koppers ovens in place of the 4th battery of Wilputte ovens, the cost would probably be the same.

President.—But the output would be smaller.

Mr. Alexander.—If the battery is of the same size as the present battery of Wilputte ovens, the output would be the same.

Dr. Matthai.—And the initial cost would be the same.

Mr. Alexander.—Yes. The Wilputte ovens are bigger and hold more material.

President.—Supposing you were to get up to your original programme of having 420,000 tons of finished steel, would your present equipment of coke ovens be adequate?

Mr. Alexander.—No.

President.—Not even for that?

Mr. Alexander.—It would be adequate for 420,000 tons of finished steel but it would not leave any pig iron for sale. We can make with our present equipment 420,000 tons of finished steel but can release no pig iron for sale.

Mr. Peterson.—We could not blow in the 5th furnace.

President.—I am coming to that later on. The original estimate of the greater extensions was not very accurate on that point. When they made provision for 420,000 tons of finished steel, they had these old coke ovens and they were contemplating only three batteries of Wilputte ovens. How did it happen?

Mr. Alexander.—They were thinking of keeping some of the Evence Coppee ovens in operation until such time as they could build the additional 4th battery of Wilputte coke ovens.

President.—And the drag ovens?

Mr. Alexander.—No. Only they were contemplating to have Evence Coppee ovens in operation.

President.—Your production in 1923-24 was only 139,000 tons in the Evence Coppee ovens, was it not?

Mr. Alexander.—Yes, roughly 12,000 tons a month in four batteries.

President.—The reason why you fell short of coke is because you have shut down the Coppee ovens?

Mr. Alexander.—That is right. But even the Coppee ovens would not give us enough coke to run the five blast furnaces.

President.—I am now concerned with the 420,000 tons of finished steel *plus* the 40,000 tons of pig iron, or say 20,000 tons of steel extra, that was estimated. For that production would your coke suffice under your present arrangements?

Mr. Alexander.—Just about.

President.—That makes 440,000 tons of steel. You take 1½ tons.

Mr. Alexander.—No. 1·33.

President.—How many tons of coke would that require?

Mr. Alexander.—60,000 tons of coke per month for 440,000 tons of steel.

President.—The point is that if you were to approach our last estimate of your total output, even then it would be safer to have another coke oven.

Mr. Alexander.—That is right.

President.—And you intend to put that up, don't you?

Mr. Alexander.—Yes.

President.—I want to go into this point in some detail this morning. You are going to put in an extra battery of coke ovens at a cost of Rs. 25,00,000. That you regard as urgent. You could not work your plant with any efficiency if you exceeded the original estimate without some extra coke unless you bought it.

Mr. Alexander.—We might buy.

President.—If you had to buy it how much would you have to pay f.o.r. works for a ton of coke?

Mr. Alexander.—Just now we are paying Rs. 11-8-0 per ton f.o.r. works. 18 months ago we had to pay about Rs. 20 a ton.

President.—Rs. 11-8-0 is very nearly your own figure. The average of your works cost into the blast furnace is Rs. 12 so that when you are buying at 11-8-0 it is not very expensive for you.

Mr. Alexander.—Not at the present moment.

President.—I am trying to find out the relative urgency of these developments and I want to know whether, for the time being at any rate, you can do without spending 25 lakhs of rupees. What I was suggesting to you is whether it was not possible, until you could build your own new coke ovens, to go on with bought material.

Mr. Peterson.—That is what we propose doing until about 1930-31.

Dr. Matthai.—According to your programme this thing would not be in operation till 1931-32?

Mr. Alexander.—It will be finished in 1930-31. The last expenditure of 15 lakhs is in 1930-31.

Dr. Matthai.—So that it will be in operation in 1931-32?

Mr. Alexander.—Yes.

President.—I want the point to be cleared up.

Mr. Peterson.—I might explain the whole position. During the war several of the big Calcutta firms—colliery owners—put up large by-product coke ovens, which make excellent coke, to make coke from their own collieries. It was supposed at the time that there was going to be a very big demand in India, for new iron and steel works engineering purposes, and I think for railways too, for coke, and that also a big profit would be obtained from the by-products when they got these plants into operation. When they got these plants into operation they found the sale of coke a very difficult matter, and as the Board knows, the coal position itself at present is very depressed. The result is that these works find it very difficult to carry on at all. We have bought very large quantities of coal from outside and it occurred to us 15 to 20 months ago that it would pay us to get from our coal suppliers coke instead of coal and we have made arrangements accordingly and we hope by these arrangements to tide over these four or five years with bought coke.

President.—So far as the next four or five years are concerned you can carry on?

Mr. Peterson.—Yes. That is why we have extended our programme for these coke ovens over a period of five years.

Dr. Matthai.—In view of what you have said, supposing your fourth battery had been ready for operation this year even then from your point of view perhaps it would be more economical to buy from outside for these three or four years during which the depression might continue?

Mr. Peterson.—No. We should have preferred to use our own battery of coke ovens to get the coke, partly because we thereby reduce our supplies of coal and partly because we get the use of the gas. We don't know whether we would make much profit out of the by-products but we might. Also it would be much safer. We want to get our own batteries as soon as we can.

Mr. Alexander.—If we gave our coke ovens full credit for the cost of our gas! The cost would be a rupee less than it is to-day, but the other departments will have to pay it.

Mr. Mathias.—Have you contracts for coke fixed up to 1931?

Mr. Peterson.—We have fixed a certain number of them for 12 months, but there is no chance of a change in the situation before that.

President.—Who are your probable suppliers?

Mr. Peterson.—We have bought coke from Messrs. Jardine Skinner & Company—from the Barari Colliery—and we have offered Messrs. Bird & Company a contract for coke in place of the coal they were supplying. It suits them and it suits us because it pays them to keep their coke ovens in operation and we want to reduce our surplus quantities of coal.

President.—Have you got to add anything to the f.o.r. cost to correspond to your own cost? You take it straight from the coke ovens to the blast furnace.

Mr. Alexander.—Yes, at the coke ovens cost price.

Mr. Mathias.—Are there no handling charges?

Mr. Alexander.—There might sometimes be stacking charges. Supplies don't come in regularly.

President.—If you have got to incur no additional expense after the coke arrives at the works, I think the two things are comparable.

Mr. Peterson.—There is one further advantage I might mention and that is that coke does not deteriorate in the same way as coal will if it is stacked.

President.—The only thing you have got to be sure about is that the supplies should be regular.

Mr. Peterson.—I think we are fairly safe there because there are four of these modern by-product coke ovens in the coalfields, but there is no outlet for their coke.

The Blast Furnaces.

President.—As regards your blast furnaces you have got five, A, B, C, D and E.

Mr. Alexander.—Yes.

President.—A, B and E are the old ones; E is the Batelle, and C and D are the latest?

Mr. Alexander.—Yes.

President.—What is the full capacity?

Mr. Alexander.—800,000 tons of iron and 10,000 tons of ferro manganese.

President.—Between the five?

Mr. Alexander.—For the five.

President.—I want to know for A, B and E.

Mr. Alexander.—Roughly 12,000 tons a month each one.

President.—Have you reached that output in each case? How much do you fall short of on the average?

Mr. Alexander.—We have not got separate figures here.

President.—We will take the full capacity for the present, 36,000 tons a month between the three. How much for C and D?

Mr. Alexander.—I think it is 20,000 tons. I can get the exact figures for you.

President.—That would be of great help to us, because as far as I can see in the blast furnaces there are no serious alterations from the original plant. Last time you gave the tonnage of pig iron as 600,000 tons, now you are bringing it up to 800,000 tons. I want to know how you expect to increase your estimated output by nearly 200,000 tons?

Mr. Alexander.—That is a case where we were not too sanguine.

President.—It may be that you are too sanguine now! I just want to know how it is.

Mr. Alexander.—This has been worked out from actual experience in the old furnaces. We got a production of 53,000 tons in one month in four furnaces.

President.—You reached a production of 573,000 tons of pig iron in 1925-26 (Statement No. 3). It is just a few thousand tons below the original estimate of the Greater Extensions.

President.—That was in the five furnaces. I want to know how you went wrong like that.

Mr. Peterson.—Since then we found out that the furnaces will produce much more tonnage than was thought possible at the time.

President.—Is it due to improved practice or miscalculation?

Mr. Alexander.—Improved practice.

President.—Apart from the question of cost in what way has the practice improved?

Mr. Alexander.—We originally estimated each furnace would produce so much pig iron, since then we made certain changes and we have demonstrated that we can produce much more iron than we have actually done. Do you want to know the technical reasons?

President.—I want to know the reasons. There is a big disparity in the figures and I want to see how you have attained this bigger output which is more than 30 per cent.

Mr. Alexander.—The easiest way for me to explain would be that at that time we were operating the furnaces in a certain way. Since then we have changed our method of operating them and we can get much better results.

President.—What is the exact change?

Mr. Alexander.—In the first place we are blowing more wind than we originally thought we could blow.

Dr. Matthai.—Does that shorten the period?

Mr. Alexander.—The amount of iron you can make depends on the amount of coke you burn and the coke you can burn depends on the amount of wind you blow into the furnace.

President.—What is the good of burning more coke? Is it to shorten the time?

Mr. Alexander.—It makes more tonnage.

President.—What is the next reason?

Mr. Alexander.—That is the result of more wind. The other thing is we are changing the flux from dolomite to limestone.

President.—Is it because of any deterioration in dolomite?

Mr. Alexander.—No. But we know from actual experience and experiments that we can produce more iron by using limestone than by using dolomite as flux.

President.—Anything else?

Mr. Alexander.—The third is the way of putting the different materials into the furnace. We used to charge the materials in a certain way. We now charge them in a different way.

President.—It gives the same weight.

Mr. Alexander.—Three things are put in: coke, flux and ore. We charged them in certain proportions before. We have now altered these proportions and found that we could get better results that way.

President.—Does it mean better timing?

Mr. Alexander.—It is a different way of mixing the materials up.

Dr. Matthai.—By a different way, you mean different proportions.

Mr. Alexander.—Yes.

Mr. Mathias.—As a matter of fact have not other blast furnaces in India similarly improved their output by improved practice?

Mr. Alexander.—The Indian Iron and Steel Company use the same method.

Dr. Matthai.—On page 11 of the representation you make a statement that the results on the two large furnaces recently erected are already in advance of results obtained upon similar furnaces in America. I was wondering whether, when you made your original estimate, you went upon results likely to be made on similar furnaces. Now, as a result of these improved practices, you are able to improve upon the results obtained in America.

Mr. Alexander.—That is correct.

President.—Having regard to the local conditions of the ore and the coke, I take it that you have introduced these modifications.

Mr. Alexander.—No.

President.—Then what is it? Is your practice in accordance with the American practice?

Mr. Alexander.—Yes.

President.—It was not in accordance with that practice before?

Mr. Alexander.—It was not pushed hard enough.

Mr. Peterson.—Continual alterations are going on.

Mr. Alexander.—A plant standing still doesn't do any good. It must continually go forward.

President.—When did you shut down the Batelle Furnace?

Mr. Alexander.—In October 1924.

President.—It doesn't come into the 1925 figures.

Mr. Peterson.—No.

President.—How much is it?

Mr. Alexander.—About 12,000 tons in future.

President.—Just now.

Mr. Alexander.—120,000 tons a year.

President.—Even so it is more than 100,000 tons to get and do you expect it by these improved methods?

Mr. Alexander.—Absolutely.

President.—But then the point is until you have extended your steel plant, you don't require so much pig iron.

Mr. Alexander.—We won't blow in the 5th furnace until it is absolutely necessary.

President.—You have got more than enough pig iron for your present purposes.

Mr. Alexander.—This year we expect to make apart from our requirements enough pig for sale. As a matter of fact we have not made as much pig iron as we can. We could have made much more pig iron last year than we actualy did. To-day we are making more pig iron than we were making last year.

President.—Supposing you make this 800,000 tons of pig iron and you make 560,000 tons of finished steel, will it leave any surplus pig iron?

Mr. Alexander.—40,000 or 50,000 tons for sale.

President.—No more than that.

Mr. Alexander.—No.

President.—During the intermediate period won't you have far too much pig iron?

Mr. Alexander.—We will have to operate the furnaces accordingly. We are not making so much tonnage, because we don't need it.

Mr. Peterson.—If a big demand for pig iron arises, we can make it. At present there is no demand for it.

President.—How much surplus pig iron is left now?

Mr. Peterson.—130,000 tons.

President.—You will have to sell it for whatever you can get at present.

Mr. Peterson.—There is a fair demand for pig iron just now. It has improved slightly.

President.—Did a considerable quantity go to America?

Mr. Peterson.—Basic iron is going to America, and Japan is taking increased quantities.

President.—Do you think that there is a market that will absorb your 130,000 tons of pig iron *plus* what the Indian Iron and Steel Company are making?

Mr. Peterson.—Our estimate of sale this year is 120,000 tons.

President.—You have got to go on until you get your extra steel furnace. Will you be able to do that?

Mr. Peterson.—It is a chance we will have to take of being able to dispose of our pig iron.

Dr. Matthai.—In what proportion did you export to America and Japan last year? Was it half and half?

Mr. Peterson.—I don't think more than 30 per cent. went to America. Japan took more.

Mr. Alexander.—And the balance was sold in India.

Dr. Matthai.—What I want to know is supposing you had a reduced outlet in America, could you find a sale for the rest in Japan?

Mr. Peterson.—The Japanese market is limited. We sold 60,000 tons to Japan last year.

President.—Supposing you are shut out from America?

Mr. Peterson.—We have exported iron to England and the Continent.

President.—There is always Great Britain as a last resort.

Mr. Alexander.—Yes. The Indian Iron and Steel Company have landed iron in Glasgow.

Mr. Peterson.—These are the export figures for 1925-26:—We sent 69,000 tons to Japan, 39,000 tons to America, 1,700 tons to China, 600 tons to Africa, 1,700 tons to Italy and the balance was sold in India.

Dr. Matthai.—Why do you say that the Japanese market is limited?

Mr. Peterson.—Their market is limited to their steel manufacturing capacity.

Dr. Matthai.—They are increasing their own supplies.

Mr. Peterson.—We also sent 1,500 tons and 790 tons to Manilla, Philippines.

Dr. Matthai.—How much does it come to?

Mr. Peterson.—The total export comes to 115,000 tons. Japan was relying on Manchurian iron and it is not now apparently getting it. I am not sure what the exact position is.

President.—There is a fair market in Italy if you can get the freight.

Mr. Peterson.—There is a good market in Italy, but at a low price. We come in competition with depreciated exchanges there.

President.—But in the case of pig iron assuming that all the overhead and other charges were borne by steel, then so long as you get something over your works cost, it is a profit.

Mr. Peterson.—We sell steadily and we expect to be able to sell our surplus without much difficulty.

President.—That leaves you Rs. 12 per ton all round.

Mr. Peterson.—Last year the margin over works cost was Rs. 10. This year it would be more.

President.—In the case of pig iron it is all profit.

Mr. Peterson.—If you like to look at it that way.

President.—The other charges are borne by steel in our scheme.

Mr. Peterson.—According to the way you worked it out.

President.—Any surplus over the works cost is profit in the case of pig iron.

Mr. Peterson.—Yes, according to the way in which you worked it out.

President.—From your point of view too, unless you keep a separate account for overhead and other charges for pig iron, which you don't.

Mr. Peterson.—We don't.

President.—There is no difference between our method and yours.

Mr. Peterson.—If by profit you mean "gross profit," yes. If by profit you mean "nett profit," no.

President.—It is a contribution made by pig iron to steel.

Dr. Matthai.—It is rather a kind of by-product. You try to get out of it whatever it costs you to produce and for the rest get whatever it will fetch.

Mr. Peterson.—You can't sell it at any other price.

Dr. Matthai.—Supposing your market price was less than your works cost.

Mr. Peterson.—You still would have to sell it at that price or stop making.

Dr. Matthai.—It won't be worth your while to make it.

Mr. Peterson.—No. That is why we have stopped making more. It doesn't pay us.

President.—Unless you put down an additional blast furnace, you would not have enough pig iron for steel.

Mr. Peterson.—We do consider as a matter of fact from day to day the situation of the pig iron market and the requirements of the plant for steel.

Mr. Alexander.—We blow the furnace according to the amount of iron that is required.

President.—As regards your ferro manganese, you simply make it for yourselves.

Mr. Alexander.—We sell in small quantities.

President.—Not ordinarily.

Mr. Alexander.—We could make it if we are assured of the market. But we can't do that.

President.—Is there no real market for ferro manganese?

Mr. Alexander.—There is a big market.

President.—I mean for the kind of ferro manganese that you make.

Mr. Alexander.—There is, but not at a profitable price.

Mr. Mathias.—You are manufacturing ferro manganese for sale?

Mr. Alexander.—We have to make it, because it is required in steel making. We sell ferro manganese in small quantities to Japan.

President.—So far as the development programme is concerned, there is no addition to the blast furnace plant.

Mr. Alexander.—There is no expenditure on the blast furnace except item 25 Blast Furnace Blowers.

President.—Item 25 is a very small item.

Mr. Alexander.—It is not a very important item.

President.—Unless you add an additional furnace, you would not have enough pig iron.

Mr. Alexander.—The 5th furnace would give us enough pig iron.

President.—For the whole programme?

Mr. Alexander.—It would give us a surplus of about 40,000 tons.

Dr. Matthai.—40,000 tons is the reserve you keep.

Mr. Alexander.—That would be quite sufficient.

Mr. Mathias.—I think it is 60,000 tons.

Mr. Peterson.—40,000 tons for sale and 20,000 tons for our reserve.

President.—You say 60,000 tons on page 15 of your representation.

Mr. Alexander.—That is right.

President.—As regards the statement to which Dr. Matthai referred on page 11 of your printed representation, *viz.*, "We may state, for the information of the Board, that our results on the two large furnaces recently erected are already in advance of results obtained upon similar furnaces in America," do you mean as to cost or output?

Mr. Peterson.—It is the output of iron per square foot of furnace.

President.—We can't compare the costs.

Mr. Peterson.—Our costs are a long way below.

President.—It is difficult to see.

Mr. Peterson.—I have here the Report of the American Tariff Commission on the question of the production of pig iron in which they give the American costs and the American production costs were a long way above ours. I can put it in evidence if you like.

President.—I think that the British costs are given in the Iron and Coal Trades Review.

Mr. Peterson.—This gives the full cost right through including depreciation, interest, etc. It is a complete list of their costs taking a large number of different plants.

President.—I should like to get that information.

Mr. Peterson.—This is a preliminary statement (handed in) of information issued by the United States Government on March 9th. I can give you a comparison of our costs with theirs if you like.

President.—We will have to go into the question of costs with Mr. Mather, that is why I don't want to go into it now. My point is about the output and I don't want to go into much technical detail. What is the difference in the matter of output per sq. ft. between India and America?

Mr. Peterson.—We will have to send you a blue print to explain that.

President.—With reference to that, you can send us a statement if you like.

The Open Hearth Furnaces.

Now we shall go on to the Open Hearth. If you refer to page 255 of Volume I of the Evidence recorded during the original enquiry, you will find that there are four things mentioned to increase the efficiency of the open hearth. The first is: "We are building a new calcining plant in which our refractories will be calcined which should not only result in lower consumption but less bottom trouble, consequently higher tonnage."

Mr. Alexander.—We have already done that.

President.—I want you to tell the Board how far you have done that.

Mr. Alexander.—We have completed a new calcining plant.

President.—We want to know its effect on your bottom troubles.

Mr. Alexander.—All I can say is that our bottom trouble is less.

President.—What have you gained by that?

Mr. Alexander.—We have gained much more tonnage than that explained by less bottom trouble.

President.—Tell us that please.

Mr. Alexander.—The gain in tonnage was largely due to increased percentage of scrap and better gas coal.

President.—I am referring to the calcining plant. How has that affected your output?

Mr. Alexander.—We have been enabled to use calcined limestone instead of raw limestone.

President.—What trouble did it eliminate?

Mr. Alexander.—It gives a lower slag volume. It gives us more tonnage per unit of time as it reduces the time of heats.

President.—The bottom trouble arose, I take it, from the fact that the slag used to clog the holes at the bottom.

Mr. Alexander.—That was due to having a large slag volume and to steel being in the furnace for a longer time. The erosion in the refractory lining is less now. The quicker the heats, the shorter is the time that steel remains in the furnace and consequently the erosion in the refractory lining is less.

President.—That is what the calcining plant is intended to do.

Mr. Alexander.—Yes.

President.—But I see that you are developing that calcining plant further.

Mr. Alexander.—We want additional calcining kilns. We have not sufficient kilns for the increased tonnage.

President.—Let us stick to 420,000 tons at present. So far as that goes is your calcining plant complete?

Mr. Alexander.—Yes.

President.—Nothing further has to be done.

Mr. Alexander.—No.

President.—Then, the second thing was that you expected more scrap from the steel production of the new plant for the open hearth and that that would mean less iron and lower slag.

Mr. Alexander.—That is right.

President.—As regards the use of scrap, at that time you were using about 25 per cent. of scrap.

Mr. Alexander.—Yes.

President.—I think that we suggested that you might go up to 70 or 75 per cent. of scrap. Do you think that you may not be able to do so?

Mr. Alexander.—We said that it would be impossible to go as high as 70 or 75 per cent. but that we would go as high as we could.

President.—What is your principal difficulty?

Mr. Alexander.—We cannot charge it. We don't have the charging facilities. We have antiquated charging machines and charging arrangements.

President.—It is only a question of changing the machines. Is it the construction of the hearth that makes it difficult?

Mr. Alexander.—It is the lay-out of the plant. We cannot make any changes unless we practically rebuild the entire plant.

President.—So that 50 per cent. scrap is about the limit.

Mr. Alexander.—No. At times we charge 55 per cent. of scrap. Ultimately we might get up to 60 per cent., but we cannot get up to 75 per cent.

President.—How much scrap do you produce now?

Mr. Alexander.—About 125,000 tons of scrap.

President.—You would not have more than 50 per cent. to charge because you have already reached about 228,000 tons or something like that for your open hearth.

Mr. Alexander.—That is from the finished steel. If we take the scrap from the open hearth and the duplex, it will amount to another 30,000 tons. On the whole, we will have in the neighbourhood of 160,000 tons of scrap available.

President.—You would manufacture in round figures 240,000 tons of steel in the open hearth.

Mr. Alexander.—240,000 tons of steel ingots would require a charge of 270,000 tons and 50 per cent. of that would be 135,000 tons.

President.—How much do you expect to have?

Mr. Alexander.—155,000 tons.

President.—You have not got enough scrap to run up to 75 per cent.

Mr. Alexander.—Even if we had we could not do so.

President.—At present you have a certain surplus of scrap which you use in the blast furnaces?

Mr. Alexander.—We are selling about 1,000 tons a month.

President.—There is only a margin of 1,000 tons a month in all.

Mr. Alexander.—We put 2,000 tons in the blast furnaces and sell 1,000 tons.

President.—If your output reached 420,000 tons, you would not have any surplus at all.

Mr. Alexander.—We would still have about 25,000 tons of scrap.

President.—As a matter of fact, you get more scrap because you don't use any in the Duplex.

Mr. Alexander.—That is right.

President.—Your ambition cannot soar higher than 50 or 60 per cent.

Mr. Alexander.—That is true.

President.—The next point as regards the open hearth was labour reduction, and the last point was about a more varied line of product into which you could put more of your off-grade steel. But these points do not arise out of the open hearth.

Mr. Alexander.—We are doing that now and we will go further still.

President.—It has nothing to do particularly with the open hearth.

Mr. Alexander.—No.

Mr. Peterson.—There is one point about the open hearth. There has always been a very high percentage of covenanted employees in that department.

President.—I am going to deal with that point separately. As regards the output on the open hearth, I think at that time you stated that in America they got about 18,000 to 21,000 tons per month on a similar open hearth.

Mr. Alexander.—Yes.

President.—You have got 7 open hearth furnaces and the output does not come any way near 18,000 to 21,000 tons.

Mr. Alexander.—We are making that now.

President.—Your furnace plant will produce 18,500 to 21,000 tons.

Mr. Alexander.—Last year the output was 220,000 tons. If you divide that by 12, you will get 18,300 tons.

President.—So that you have reached the American capacity more or less.

Mr. Alexander.—Yes, the low limit. The high limit is 21,000 tons.

President.—Do you hope to reach that?

Mr. Alexander.—Yes.

President.—In that case, there will be no substantial difference.

Mr. Alexander.—No.

President.—Last time I asked you for a comparison of the cost between the old open hearth and the new ones, but you did not give it.

Mr. Peterson.—I said that we did not keep the results separately.

President.—What I want to know is how the four old and the three new ones compare in efficiency.

Mr. Alexander.—We don't keep the operating costs separately but we can give you the tonnage separately as well as the cost of repairs.

President.—Would you give us those figures?

Mr. Alexander.—Yes.

President.—Has there been any reduction in the time of heat?

Mr. Alexander.—Yes.

President.—How many heats do you get now?

Mr. Alexander.—It is very difficult to answer that off-hand.

President.—On the whole how many heats per year do you get out of the furnaces?

Mr. Alexander.—Around 500 heats approximately. 500 heats per furnace per year. For the seven furnaces it would be 3,500 heats per year. This of course is only approximate.

President.—When you said that in the United States they get 200 heats against 100 heats, what exactly did you mean?

Mr. Alexander.—That is the life of the furnace before they have to be repaired.

President.—What I want to know is whether the number of heats has increased?

Mr. Alexander.—You mean per year?

President.—Yes.

Mr. Alexander.—That has increased. I can give you figures to show that.

President.—Can you give us the average length of the heats?

Mr. Alexander.—About 11 hours. That has decreased about 30 to 40 minutes. I can give you these figures. You want (*a*) the heat per furnace per annum, (*b*) reduction in time and the heat, and then (3) life of the furnace.. I can give you figures to show that the life of the furnace has increased. Over what period do you want this information?

President.—I want to compare 1921-22 with 1925-26.

Mr. Alexander.—We will do that for you.

President.—I think you gave us the figures about the difference between the cold weather output and the hot weather output. Last time one of the reasons given was that owing to climatic conditions your output was smaller than it ought to have been. From what I can see from the reasons given now there is no such great disparity.

Mr. Alexander.—In the meantime the output of American furnaces has gone up. We will never make as much steel in India per furnace as they do in America or in Europe.

President.—The difference will remain more or less constant?

Mr. Alexander.—Almost always.

President.—Let us see how your figures work out. October to March are the cold weather months and there has been a more or less steady increase during the period except in 1923. That was the strike year, was it?

Mr. Alexander.—Yes. It began in October and finished in November.

President.—There is an increase in the cold weather output of approximately 10,000 tons each year between 1921 and 1925. As regards the hot weather output the results are not so very regular. In the hot weather of 1922 there was a drop from 1921 of about 8,000 tons.

Mr. Alexander.—That was the strike period in our works. I think the strike affected both the cold and the hot weather tonnage.

President.—Then there is an improvement of 9,000 tons in the hot weather of 1923 and another improvement in the next hot weather of about 14,000 tons and in the last one of 16,000 tons.

Mr. Alexander.—The big increase of 9,000 tons was due to the low tonnage on account of the strike in the previous hot weather.

President.—As regards the increase in the cold weather months you cannot say it is due entirely to the weather?

Mr. Alexander.—Why not?

President.—Because there is also an increase owing to better practice.

Mr. Alexander.—But comparing the hot weather tonnage with the cold weather tonnage in the same years.

President.—There is a difference of 8,000 tons between the two.

Mr. Alexander.—You say there has been a constant increase in the cold weather tonnage except in 1923?

Dr. Matthai.—What is that due to? People do not work so much as they do in the cold weather, is that the reason?

Mr. Alexander.—A man cannot work as well in a temperature of 120° as he can in a lower temperature.

President.—In the last year there is a difference of nearly 19,000 tons between the cold weather and the hot weather outputs.

Mr. Alexander.—There is bound to be.

President.—As regards the increase in the hot weather output it due to the alteration in the heating arrangements?

Mr. Alexander.—It is due entirely to the same changes which have caused a general inorease in tonnage.

President.—At the same time the disparity in course of time, if it goes on like that, will be smaller and smaller?

Mr. Alexander.—It may be smaller but the hot weather tonnage will never reach the cold weather tonnage on an average. It is physically impossible. We may be up against some difficulty sometimes in the cold weather when the hot weather tonnage may equal the cold weather tonnage, but on the average it will remain lower.

Dr. Matthai.—Do you have this difference in America?

Mr. Alexander.—Yes. They have three hot months, June, July, August and the tonnage during these months is always lower than in the other nine months of the year.

Dr. Matthai.—Does it affect the men?

Mr. Alexander.—It affects the efficiency of the men as well as of the furnace. The chimneys don't draw as well.

President.—Last time there was a proposal for installing water cooling doors to the open hearth? Have you completed that programme?

Mr. Peterson.—We have completed them and partly gone back to the other because they have not proved satisfactory.

President.—You may get back to your old tonnage too then?

Mr. Alexander.—We won't. We started with the water cooled doors. In operating these we found that the molten metal in the furnace splashed against the doors and burnt them, and we found the cost of upkeep prohibitive.

President.—There is no other way of reducing the heat in the open hearth?

Mr. Alexander.—There is no practical method of doing it.

President.—But they do it in the sheet mills?

Mr. Alexander.—In the sheet mills they have it, but it would be impractical in the open hearth.

President.—What would it do?

Mr. Alexander.—It would cool the men. In the open hearth the heat is so much more intense and the men have to be careful how they get into the

draught and catch a chill. The difference in temperature on the open hearth floor and the sheet mill is about 25 to 30° in the hot weather.

President.—Then so far as that goes, I take it, there is nothing that can be done?

Mr. Alexander.—We had to remove the water-cooled doors for the reasons stated before and it is no use putting in other arangements as they would not be practical. When the men get right in front of the furnaces it is then that they feel the heat most.

President.—The result is that they cannot keep constant watch on the furnace?

Mr. Alexander.—That is right.

President.—Does it affect the quality of the steel in any way or does it simply affect the length of the heat?

Mr. Alexander.—If they don't keep constant watch they burn the furnaces down.

President.—Is the quality of the steel affected during the hot weather?

Mr. Alexander.—Not so much as the output.

President.—Why is the output affected?

Mr. Alexander.—Because the men cannot stay near the furnaces and give them for a long time as much attention as they should.

President.—But won't that affect the quality?

Mr. Alexander.—It does sometimes. This is not as serious as the fact that during the hot weather we get more off grade heats.

President.—That you use for your light rails, Agrico and things like that?

Mr. Alexander.—Yes.

President.—I think the last time you contemplated that you would increase the capacity of your furnaces?

Mr. Alexander.—Ultimately, not at present. Not until we get the full output from the duplex.

President.—At present the avegage capacity of each open hearth furnace is about 57 tons. Do you contemplate increasing the capacity?

Mr. Alexander.—Four of the existing open hearth furnaces now have a capacity of 55 tons and 3 a capacity of 90 tons. The smaller ones can be greatly improved if they are enlarged to 90-ton furnaces. We cannot top larger heats now because the cranes are not of sufficient capacity to handle the larger heats.

President.—Is that included in the development programme?

Mr. Peterson.—Yes, item 7 under list B.

Dr. Matthai.—You are proposing to have another 100-ton crane on the open hearth plant and remodelling 4 old open hearth furnaces.

Mr. Alexander.—That is right.

President.—It will mean pulling down the furnaces one at a time.

Mr. Alexander.—Reconstructing all the four old furnaces.

President.—And go to 75 tons?

Mr. Alexander.—80 to 90 tons. We cannot say now exactly what capacity they would be.

President.—There will be 4 furnaces. That would give you nearly double the output.

Mr. Alexander.—No. If you have a furnace making 50-ton heats and replace it by a furnace of 100-ton capacity, it doesn't mean that it will make twice as much steel.

President.—How much additional steel would you get if you get 90-ton heats out of these furnaces?

Mr. Alexander.—It is very hard to say at the present moment. We have not taken this into consideration in this estimate of output that we have given you. We could get at least 10 to 15 per cent. more on each one of them. The increased output on the four furnaces would be 10 to 15 per cent. more on the entire plant.

President.—How many tons would it mean in a year?

Mr. Alexander.—We can now make 20,000 tons per month. That is the estimate we have given you not taking into consideration the remodelling of the old furnaces. We may get 2,000 to 3,000 tons more per month.

Mr. Mathias.—Your maximum output will be 276,000 tons.

Mr. Alexander.—Yes.

Dr. Matthai.—What is this difference in the estimate that you show in 1933-34 due to? There is a difference of 24,000 tons between 1926-27 and 1933-34.

Mr. Alexander.—That is right. I have not gone beyond 20,000 tons and have not taken the enlargement of the four old furnaces into consideration. That is not contemplated until practically everything else is completed.

Dr. Matthai.—The increase that you show here is irrespective of that.

Mr. Alexander.—Yes.

President.—With regard to tapping the open hearth furnaces, we understood there was some difficulty.

Mr. Alexander.—In what way.

President.—That is as regards stationary as compared with titling furnace. No improvement can be made, I take it, so long as the furnaces are stationary.

Mr. Alexander.—That is right.

President.—We again come to the bottom troubles. I think you have told us that you would give us figures as to the life of the furnaces. May I take it that the life has become longer?

Mr. Alexander.—Yes.

President.—I would like you to explain what it is due to. At that time we were told there were some defects in the refractories, etc.

Mr. Alexander.—We have already talked about three things, more heats per furnace per year, reduction in the time of heats and the longer life of the furnace.

President.—I assume that those figures would bear out your point in all those respects when the furnaces are improved. Now I am dealing with bottom troubles.

Mr. Alexander.—The same explanation applies here.

President.—The bottom trouble may be traceable to other things such as refractories and so on.

Mr. Alexander.—How much importance was laid on that?

President.—It was said that some of these things were not as good as they might be.

Mr. Alexander.—That still applies.

President.—Let me put it this way. The bottom troubles are due partly to the refractories.

Mr. Alexander.—Yes, our refractories are not as good as the refractories in other countries.

President.—What are the principal refractories you use?

Mr. Alexander.—Dolomite.

President.—Anything else.

Mr. Alexander.—We use magnesite. This being imported, it is as good here as in any other country.

President.—You use some bricks.

Mr. Alexander.—We use some silica bricks. They may be slightly inferior to foreign silica bricks, but very little.

President.—As regards these three refractories, has there been no improvement?

Mr. Alexander.—They are just about the same.

President.—But then the bottom trouble must remain the same in so far as they were due to the refractories.

Mr. Alexander.—Yes.

President.—What other cause is there for the reduction of bottom troubles?

Mr. Alexander.—(1) Higher percentage of scrap which gives us less slag volume, (2) quicker heats. More heats per unit of time which gives less bottom trouble. As I said before the shorter the time the steel is in the furnace, the less hard it is on the refractories and consequently less bottom trouble. There is one other point that was not been mentioned before in the other evidence, and that is the quality of our gas coal. During the 18 months we have succeeded in getting a better quality of gas coal.

President.—That is for the producers.

Mr. Alexander.—Yes; that has been a big factor in the increase in tonnage, shorter heats, longer life of the furnaces and the decrease of bottom troubles.

President.—I am glad you mentioned it now. It was never mentioned before

Mr. Alexander.—No.

President.—How does the gas affect the bottom troubles?

Mr. Alexander.—Better gas allows us to make quicker heats. There are really two major items:

(1) reduction in the percentage of pig iron or the increase of scrap, whichever way you put it, and

(2) the better quality of gas coal.

President.—These refractories, etc., do not matter so much.

Mr. Alexander.—No. These two items account for 90 per cent. of the increase.

President.—Your magnesite bricks are still imported. That is the only refractory that is imported.

Mr. Alexander.—Yes, magnesite and magnesite bricks.

President.—Has there been much variation in the price since we last met.

Mr. Alexander.—It might be somewhat lower, but nothing substantial.

President.—As regards the yield in the open hearth department the yield is the percentage of the total quantity of net metal charged.

Mr. Alexander.—No, gross metal charged.

President.—Some ingots must be spoiled. Does it mean all good ingots which you can roll, or does it mean all ingots produced?

Mr. Alexander.—It means practically all ingots produced that we can roll, less than one per cent. being bad.

President.—So it is all usable ingots.

Mr. Alexander.—Yes. If any ingots are scrapped, they are taken off the tonnage.

President.—They go into the scrap.

Mr. Alexander.—Yes.

President.—At the ingot stage, what form does the scrap take? Is it the overflow from the ingots?

Mr. Alexander.—When a heat of steel is tapped out of a furnace, it flows into a ladle. Sometimes the ladle is over filled with steel and some of it overflows into the pit. This may amount to 1 per cent. on the total tonnage. Sometimes you have a skull left in the ladle when the metal is tapped too cold. When the molten steel is poured into the moulds, sometimes there is bad teeming practice and a lot of scrap formed round the moulds. Sometimes we have an ingot which is too short to roll and that goes into scrap.

Mr. Mathias.—What exactly is pit scrap?

Mr. Alexander.—It is scrap made in the pitside.

Mr. Mathias.—Skulls I see separate.

Mr. Alexander.—That is right.

Mr. Mathias.—That is included in the scrap.

Mr. Alexander.—Yes.

President.—It is chiefly pit scrap.

Mr. Alexander.—Yes.

President.—As regards slag have you found any use for it?

Mr. Alexander.—No.

President.—In other countries they have some use for it.

Mr. Alexander.—In special processes where they have very high phosphorous in pig iron, they use it for manurial purposes.

President.—Is slag used for road making?

Mr. Alexander.—Nobody will use it. We have been trying to get people to use blast furnace slag for metalling. We have not succeeded so far.

President.—Don't you make bricks from slag?

Mr. Alexander.—No.

President.—So far, you have not been able to find any market for slag?

Mr. Alexander.—Neither for open hearth or for blast furnace slag.

President.—I suppose the Public Works Department and others might be able to use it.

Mr. Alexander.—Mr. Sawday has been trying to get the Port Commissioners and people like that to use it.

President.—In Calcutta they have to import all their road materials.

Mr. Alexander.—Yes.

Mr. Mathias.—Is this a good road making material?

Mr. Alexander.—Yes, fairly good.

Dr. Matthai.—Have you tried it in Jamshedpur?

Mr. Peterson.—I couldn't say.

President.—Can it be used with cement?

Mr. Peterson.—You can use cement with it. In England and America that is what they do.

President.—I saw something of it in France. Either it was slag or cinders which was used for making slabs for houses.

Mr. Peterson.—I know of one place in the States where they make bricks from the blast furnace slag.

President.—How much slag do you get in a year?

Mr. Alexander.—We get approximately 30,000 tons of slag a year from the open hearth, 30,000 tons from the duplex and 300,000 tons from the blast furnace. On the whole it comes to about 360,000 tons of slag.

President.—Now you dump it.

Mr. Peterson.—Yes.

President.—It comes to this that so far as the present open hearth plant is concerned, practically you have effected all the economies that you expected more or less as regards practice and other things?

Mr. Alexander.—Yes, but we still expect to go on.

President.—You are only short of about 12,000 tons a year on the maximum output that you expect.

Mr. Alexander.—Last year we made 220,000 tons and next year we expect to make 240,000 tons.

Mr. Mathias.—Is your maximum production from the open hearth 240,000 tons?

Mr. Alexander.—Yes.

Mr. Mathias.—Do you really expect to go beyond that?

Mr. Alexander.—I have not taken that into account at all.

Mr. Mathias.—You have put in only 240,000 tons so as not to be unduly optimistic.

Mr. Alexander.—Not to be unduly sanguine.

President.—In list A so far as the open hearth is concerned, there is no urgent work.

Mr. Alexander.—No.

Prsident.—I want to find out what you regard as the urgent work.

Mr. Peterson.—Item 8 (Morgan Producers) is very important.

President.—That is as regards fuel economy.

Mr. Peterson.—Yes.

President.—Do you consider that as urgent?

Mr. Peterson.—We think that it would save the cost in two years and that is why we think that it is urgent.

Preisdent.—That is a comparatively small item.

Mr. Peterson.—Yes.

The Duplex Furnaces.

President.—As regards this process, what do you call it? Is it the acid Bessemer process or is it the basic process? Mr. Peterson has made a point of it in his representation and I really want to know what it means. I take it that in the duplex converter you have an acid lining.

Mr. Alexander.—We have.

President.—To that extent, it is an acid process.

Mr. Alexander.—It is a duplex process.

President.—Would you call that a basic process generally?

Mr Alexander.—We would call it acid Bessemer basic open hearth duplex process.

President.—Your steel does not come within the specification which Mr. Peterson has stated has been prescribed by the Railways?

Mr. Alxander.—No.

President.—If they call it basic Bessemer, it is not a correct description of your process.

Mr. Alexander.—No. That was used on the Continent and in England. It is still being used on the Continent but has been abandoned in England.

President.—Is your process used in the United States?

Mr. Alexander.—Yes.

President.—And in Canada?

Mr. Alexander.—Not that I know of.

President.—In England do they use it now?

Mr. Alexander.—Not that I know of.

Dr. Matthai.—If I say that I don't want steel products made by the basic Bessemer process, it means that all steel products made by the acid Bessemer basic open hearth duplex process are excluded.

Mr. Alexander.—That is not how I take it. This clause in the specification was ruling out the basic Bessemer basic open hearth process used on the Continent. Mr. Peterson and I don't agree on this point.

President.—Speaking as a layman, it seems to me that the specification, if your opinion is right, cannot exclude your rails.

Mr. Alexander.—No, that is how I interpret it.

Mr. Peterson.—I say that it ought not to, but I am afraid that it may be used for that purpose.

President.—I want your expert's opinion on that, in the first instance. Then, we will have to ask the Metallurgical Inspector about this process. That is not a correct description of your process?

Mr. Alexander.—No.

President.—That specification will not exclude your steel, will it?

Mr. Alexander.—Not unless some one interprets it that way.

President.—There is a distinct difference between the two.

Mr. Alexander.—Absolutely.

President.—In the steel manufacture, these processes are known as different processes, are they not?

Mr. Alexander.—Yes. The basic Bessemer process is a distinct process by itself.

Dr. Matthai.—How exactly is the Railway Specification worded.

Mr. Peterson.—I have not got the actual specification here.

President.—As regards the capacity of the duplex, I think each furnace, we were told at that time, is capable of giving 200 tons a day.

Mr. Alexander.—More than that—15,000 tons per month, per furnace. We tap 100-ton heats. Each is a 200-ton furnace.

President.—The capacity as regards the tap is 100 tons.

Mr. Alexander.—That is the size of the heats tapped.

President.—You don't go by heats in this.

Mr. Alexander.—No.

President.—You go by taps, don't you?

Mr. Alexander.—That is the same thing. We go by tons per month or per year.

President.—In the case of the open hearth you said that the heating time was approximately 12 hours or under that. How would you compare it with the duplex furnace?

Mr. Alexander.—About 4 hours, per heat in the latter case.

President.—If the open hearth takes 12 hours to make a heat which is equivalent to 57 tons, how long will the duplex furnace take to produce a heat of 57 tons.

Mr. Alexander.—Let us take it at 60 tons. In 12 hours we get a heat on the open hearth. It comes to 5 tons an hour. In the duplex we get 100 tons in 4 hours, that is 25 tons per hour.

President.—What it comes to is this that 1½ open hearth furnaces are equal to one duplex furnace.

Mr. Alexander.—In capacity, yes, but not in output. The output of one duplex furnace is 5 times that of one open hearth furnace.

President.—Let us take it this way. The total production of 5 open hearth furnaces would be equal to that of one duplex furnace.

Mr. Alexander.—That is right roughly speaking.

President.—You have given the cost of the new duplex furnace at Rs. 20 lakhs, but 5 open hearth furnaces would cost a good deal more than that.

Mr. Alexander.—Yes.

President.—The initial cost of 5 open hearth furnaces would come to about Rs. 35 lakhs.

Mr. Alexander.—Yes.

President.—Against Rs. 20 lakhs for a duplex furnace.

Mr. Alexander.—Yes, that is only putting in one furnace. If you take the cost of its share of the whole equipment it might come to Rs. 40 lakhs.

President.—I am just trying to see how it compares. Five open hearth furnaces would take a good deal more space than one duplex furnace with the converter.

Mr. Alexander.—Yes.

President.—What I want you to consider is whether the initial cost of 5 complete open hearth furnaces is higher than one complete duplex furnace taking everything into consideration.

Mr. Alexander.—The initial cost would be very much higher.

President.—Can you give me some idea?

Mr. Alexander.—We can give you the actual costs of the furnaces, *viz.*, 2 duplex and 7 open hearth furnaces.

President.—The 7 open hearth furnaces will have to be converted into ten in order to compare.

Mr. Alexander.—We will have to make the calculations.

President.—When was the last open hearth built?

Mr. Alexander.—1919.

President.—The trouble is this that the value of the plant has been written down by about 33⅓ per cent.

Mr. Alexander.—Yes.

President.—I don't expect you to give the answer straight off, but I think that you would have to give the acual costs.

Mr. Alexander.—We can only give you an estimate.

President.—And then you will have to write it down in the same way. I simply want to see how it works out. We have got to take into account any other industry coming in and we have got to see whether it should have the open hearth or the duplex furnace.

Mr. Peterson.—It would really be a question of a stationary or a tilting open hearth furnace, for which we have no estimates at all. We can get an estimate of what the cost would be from England.

President.—This is quite an experiment as far as this country is concerned.

Mr. Alexander.—Yes.

President.—When we write our report we should be very careful how we appraise its success. In that respect I think it would be necessary for us to have these estimates before us.

Mr. Peterson.—If you could tell us the tonnage we could get it for you.

President.—We took 420,000 tons as the smallest economic unit.

Mr. Peterson.—Haven't you got the estimates of Cammell Laird's?

President.—It is not worked out in detail.

Mr. Mathias.—It is pretty old too.

President.—Anyhow, give us your actual costs of the 7 open hearth furnaces and also the costs of the duplex furnaces, which would include the cost of the third furnace.

Mr. Peterson.—I shall send you a statement showing the actual costs of the 7 open hearth furnaces and of the 2 duplex furnaces *plus* Rs. 20 lakhs and *minus* 33⅓ per ent.

President.—We might have to write up the open hearth. Is there any difference in the life of these two things, if you take 5 open hearth furnaces to be equal to one duplex furnace.

Mr. Peterson.—The duplex plant must produce a certain amount of scrap which cannot be used anywhere else except in the open hearth furnace. The duplex process is a pig iron process. The question of life is a question of obsolescence which does not come in until some new process is discovered in the steel industry.

President.—Could you answer the question apart from obsolescence?

President.—What it comes to is this, that it is more economical to run the open hearth along with the duplex than the open hearth by itself because you get more scrap available. The duplex does not take any scrap and your output increases, and therefore more scrap is available for the open hearth. For that reason I think this combination is more economical than having the duplex or the open hearth by itself. In India the combination of the two is more economical than either process by itself.

Mr. Alexander.—That is so.

President.—Can a stationary open hearth be converted into a tilting furnace?

Mr. Alexander.—No. It means rebuilding the whole furnace.

President.—At the time you built the open hearth was the tilting furnace common?

Mr. Alexander.—Yes.

President.—Was there any reason why you did not have the tilting open hearth instead of the stationary?

Mr. Peterson.—I think there was one very good reason. It would have been impossible to obtain the machinery during the war.

President.—Is the tilting process patented?

Mr. Peterson.—I think a certain amount of drawing and engineering is required.

President.—Is it a patent process?

Mr. Peterson.—They have a patent.

President.—So that you would have to get a license?

Mr. Peterson.—We could buy the patent right and build it ourselves or get it done by any other firm here.

President.—When you are enlarging the furnaces, it means taking them down, does it not?

Mr. Alexander.—Yes.

President.—At that stage could you not make them tilting?

Mr. Alexander.—We could.

President.—Do you contemplate doing it?

Mr. Alexander.—We do.

President.—Would that mean a substantial increase in the cost?

Mr. Alexander.—Not to any great extent.

President.—Is it a very intricate thing?

Mr. Alexander.—No, very simple.

President.—And the advantage of that is that you have less bottom trouble?

Mr. Alexander.—And less taphole trouble.

President.—You don't have to have all these men working on the taphole.

Mr. Alexander.—It does not require so much work on the taphole after each tap. You can tilt the furnace at an angle which means less trouble in fettling.

Dr. Matthai.—Supposing you had a stationary furnace and you decided to put in its place a tilting furnace of the same capacity, what difference in the output would it make? Would it make any difference in the output apart from quality?

Mr Alexander.—It would eliminate some taphole trouble and bottom trouble and that would make a difference of somewhere between 5 and 10 per cent.

President.—It takes a considerable time in the stationary furnace before it comes out, but in the other thing the steel comes out much quicker.

Mr. Alexander.—The tilting furnaces are more easily tapped but it is after tapping where most of the trouble comes in. In the stationary furnaces the holes has to be cleared of slag and steel before it is closed again, but in the tilting furnace the furnace is tilted back and the hole left absolutely clear.

President.—What it means is that it saves time?

Mr. Alexander.—Yes.

President.—The alteration is in your programme B?

Mr. Alexander.—Yes; Item No. 7.

Dr. Matthai.—It includes tilting?

Mr. Alexander.—Yes.

President.—Does it include rebuilding and everything else?

Mr. Alexander.—No. The rebuilding part of it we will do from revenue. Rs. 5,50,000 is just the excess over ordinary rebuilding.

President.—Practically you are rebuilding the furnace every time, are you not?

Mr. Alexander.—Yes.

Mr. Mathias.—When they are remodelled they will be tilting?

Mr. Alexander.—Yes.

The Rolling Mills.

President.—We now come to the mills.—I suppose the blooming mill may be described as a rolling mill?

Mr. Alexander.—Yes.

President.—As regards the old blooming mill the question of its maximum capacity does not come in at all because you are running it to about half its capacity. Am I right?

Mr. Alexander.—Yes.

President.—The question that arises is, when it is going to be closed down.

Mr. Peterson.—Nobody would be better pleased to see it closed down than ourselves!

President.—The point is, you are not closing it down till 1931-32 and the sooner you can do it the better. Meanwhile you will be losing on the old mills Rs. 15 to 20 lakhs a year on the finished product which means a crore of rupees in five years.

Mr. Peterson.—But we have got to consider which is the soonest date.

President.—You won't do it for five years.

Mr. Peterson.—It is a question of the time in which it can be done and money can be found. Many of these things would take five years to do.

Mr. Alexander.—You said the other day that you did not see any reason why we should not be running the roughing mill in 2 years so that we could shut down the old rail mill and the blooming mill. The difficulty is that if we placed an order for the machinery to-day, we would not get it until after 18 months. Then it would take another 12 months to build. That is 2½ years. To drive the mill we have not sufficient electricity and if we had the electric generator we could not raise the steam. The whole thing has got to go together and it would be impossible to do the whole thing in two years time if we started to-day.

President.—My point is that after two years you ought to be ready and in the third year you should start.

Mr. Peterson.—It could not be done. We have got seven years. We might shorten that by couple of years. But if we did that, it would probably be at the cost of the efficiency of operation of the existing plant. We have got a certain amount of organization to deal with the operation of the Greater Extensions and it will confuse the existing operations which will probably deteriorate and we would lose a great deal of money thereby.

Dr. Matthai.—By your organization you mean power?

Mr. Peterson.—I mean staff. We have this plant going and we have to increase the production as it is constructed. If we tried to push on the construction too rapidly we would weaken the other side. That is what we are afraid of and that is why we have split it up. My own personal opinion is that this programme could not be carried through earlier from the physical point of view even if we had all the money in time.

Mr. Mathias.—You estmate four years?

Mr. Peterson.—I am taking five years from 1926-27, to finish in 1931-32 and then two years to get the full effect. But that will really be shortened.

President.—I don't think that can really be shortened at all. However that is your opinion and we have got to consider how far that is possible.

Dr. Matthai.—Will you include the scrapping of the blooming mill in your capital programme?

Mr. Peterson.—We have not taken any credit for it. It is not worthwhile.

Mr. Mathias.—What is it worth?

Mr. Peterson.—Worth Rs. 20 a ton as scrap!

President.—What I want to put to you is that, first of all it is essential that you must get on to this output of 420,000 tons. In order to get that output as quickly as possible I want to know what you propose doing as regards these mills.

Mr. Alexander.—I can tell you that easily. We start at the new blooming mill.

President.—You have got your programme of work to complete the plant to obtain maximum production under list A of the representation. Please say which of the items mentioned there you consider as urgent.

Mr. Alexander.—Items 3, 4, 5, 11, 12, 19 and 27.

Dr. Matthai.—May I know whether list A deals with things which are essential to the existing plant to get the best out of it?

Mr. Alexander.—From the tonnage point of view only.

Dr. Matthai.—List B deals with just desirable things.

Mr. Alexander.—Yes, to reduce the costs.

Dr. Matthai.—As things stand at present, list A may be said to be generally more important than list B.

Mr. Alexander.—Yes.

Dr. Matthai.—In list A the things marked are the most important

Mr. Alexander.—Yes.

President.—That finished the blooming mill.

Mr. Alexander.—That is all we need in all the mills in order to get 420,000 tons.

President.—Without your using any of the old plant.

Mr. Alexander.—No. In order to get the 420,000 tons of finished product.

President.—What I want to know is, with your present capacity of 420,000 tons, in order to get rid of the old mills, what would you have to do, not increasing your output beyond 420,000 tons.

Mr. Alexander.—We will have to get an additional roughing mill.

President.—It includes practically the whole of list A except small items.

Mr. Alexander.—Yes. If we get this 420,000 tons, 64,420 tons would still be rolled on the old mills.

President.—Unless you get the new roughing mill.

Mr. Alexander.—Yes, but according to this present programme 64,000 tons would still be rolled on the old mills.

President.—That is only a reduction from 75,000 tons to 64,000 tons.

Mr. Alexander.—Yes. At present we are rolling 36,000 tons and 24,000 tons.

President.—There is no getting away from the fact that in order to get rid of the rolling mills, you have got to carry out the whole of this programme in list A.

Mr. Peterson.—We can't roll structural material on the new rail mill without this roughing mill.

President.—During the last enquiry we were not told about this defect in the new rolling mill. We understood it was capable of rolling 600,000 tons to 700,000 tons of steel. I think it is right.

Mr. Peterson.—We ourselves really discovered this defect later.

President.—When we were going into that, I distinctly remember to have asked Mr. Tutwiler "what was your full capacity."

Mr. Peterson.—Did you ask a specific question whether the old mill would be shut down?

President.—If you look at page 429 of Volume I of the evidence recorded during the enquiry into the Steel Industry you will find that the total capacity came to about 790,000 tons of rolled steel.

Mr. Alexander.—24" and 18" mill product is not a finished product. It goes into the other departments.

President.—The new blooming mill was said to be capable of rolling 650,000 tons and the new rail mill 400,000 tons. That would include all your rolled steel except sheets.

Mr. Alexander.—Yes.

President.—I am trying to point out to you that this is something new. I am not finding any fault with your programme.

Mr. Peterson.—The original Perin and Marshall's estimate, I think, showed that we were still contemplating the use of the old mills.

President.—I put this question to Mr. Tutwiler. "Your Greater Extensions are so planned that your production might be increased if finances permit without the rolling mill plant requiring any extension."

Mr. Mather.—"The additional expenditure would be less when you want to increase your production."

Mr. Peterson.—" By spending another Rs. 15 or 16 lakhs we could immediately increase our production still further by about 15,000 tons a month ".

Mr. Peterson.—We gave all these productions both in the case of old mills and in the case of the new mills. If you look at the statements given on page 181 *et seq* of the same evidence volume, you will find that we have given estimated costs of production of new and old 28" rail mills and new merchant mill and old bar mill when greater extensions are completed and are working.

President.—The impression that I gathered at that time was that your rolling mill capacity was much bigger and that your seel capacity was smaller than you required. Now we find that the steel capacity is certainly smaller and that the rolling capacity is also smaller and that extensions are needed in that direction. That is briefly the position.

Mr. Alexander.—Not the mills themselves are too small. It is the auxiliary equipment that we require. It was never contemplated to shut down the old mills entirely without the roughing mill.

President.—The position now is that it has become top heavy and it will remain so until all these alterations are carried out and your production of steel has increased.

Mr. Peterson.—The important point is the equipment of the rail mill for the production of structural material. We would only run the bar mill when we get a particular job and when it pays, otherwise we would not run it at all, but the equipment of the new rail mill for structural material is urgent. It is the new roughing mill that is required in order to enable us to shut down the old plant and that was part of the equipment that we had to cut out.

President.—What Mr. Alexander has given is slightly different from what I thought to be urgent. The items that I considered urgent were from 3 to 8 both inclusive and items 18 and 19.

Mr. Alexander.—They are no good, unless we have No. 10.

President.—Sorry. I made a slip. I have marked Items 3 to 8, 10, 18 and 19.

Mr. Peterson.—The point I was making is that it will take us a considerable time to instal them.

President.—I want to understand whether you agree that these are very important.

Mr. Peterson.—Yes.

President.—Looking at the summary of expenditure that you have given, I should like to know, whether you would finish the urgent items in list A first and then go on to the rest and list " B ".

Mr. Peterson.—It is a question of how quickly we can finish it.

President.—Have you confined your attention to the output of 420,000 tons which we assumed in 1923-24, as your final output.

Mr. Peterson.—That is exactly what we proposed to do, but I don't think you have got my point. I am looking at it from the financial point of view. I don't think more than Rs. 60 lakhs can be spent in a year. Even if I provided Rs. 70 or Rs. 80 lakhs, it would not be spent.

President.—The urgent items would not take as much as Rs. 60 lakhs.

Mr. Peterson.—More than that.

President.—Roughly about a crore of rupees would put you right so far as these are concerned.

Mr. Peterson.—We propose to spend at least a crore of rupees in the first three years.

President.—Are you including these other things in it?

Mr. Peterson.—Do you think that these other things are unnecessary?

President.—What I say is that you must carry out your programme in such a way that these things which are regarded as urgent may be finished before the others.

Mr. Peterson.—This programme makes provision for the increased production on the blast furnaces, the fourth battery Wilputte coke ovens, the equipment of the new rail mill, that is the roughing mill, the additional generator set, all the accessories, the provision of handling facilities, cranes, etc. When all these things are through, there is no particular reason why we should restrict ourselves to 420,000 tons. We obviously ought to get the maximum capacity at the earliest possible date.

President.—These old rolling mills take away at least Rs. 15 lakhs a year. That must be saved as soon as possible.

Mr. Peterson.—The point is if we can get an additional blast furnace to make rail steel and have it rolled in the new mill, so much the better. We want to time it all together if possible.

President.—What you proposed to do in 5 years, you took 10 years to do, with regard to the greater extensions.

Mr. Peterson.—The danger I am trying to avoid is the same thing that happened then. When we had materials shipped out, they were lying on the ground for two years without being erected.

President.—Now your programme is for seven years and it may run to 14 years.

Mr. Peterson.—We are trying to avoid that very thing.

Mr. Alexander.—I don't think you understand thoroughly how fast we can do this work even if we have the finance. As an illustration I got sanction from Bombay for some auxiliary equipment for the duplex plant and some gas producers, things that very little engineering work had to be done on. I got quotations and placed the orders before the 1st of last January. The material has just been shipped. It is on the water and we expect to have it here by July or August. It will be 12 months after I received the sanction until the material arrives.

President.—That is just my point. Because these things take time, you ought to start as soon as possible. Here your programme is for three or four years and therefore you must start as soon as possible.

Mr. Alexander.—There is a lot of preliminary engineering work to be done.

President.—That is all the greater reason why you should begin it earlier.

Mr. Peterson.—We don't propose to delay it at all.

Dr. Matthai.—You want more coke, you want more ingot steel and you want a roughing and finishing mill. These are the three things that you require and they really hang together.

Mr. Peterson.—Yes.

President.—Mr. Peterson, I would suggest that so far as this programme is concerned, you should give it in the form in which we were discussing it this morning.

Mr. Peterson.—Do you want a revised statement?

President.—I would like to see how much money you want to spend on each of these items and how long you would take to finish them.

Mr. Peterson.—It is given more or less here.

President.—It is better to eliminate those other things.

Mr. Peterson.—What shall we eliminate?

President.—We went into the question of important items with Mr. Alexander this morning. Mr. Alexander, do you regard 420,000 tons as a reasonably economic unit?

Mr. Alexander.—You want to stick to the old figure of 420,000 tons.

President.—We do not necessarily want to stick to it. I am asking you whether it would be considered as a reasonably economic unit.

Mr. Alexander.—No.

President.—At that time anyhow we understood that it should not be smaller than that.

Mr. Alexander.—What we are aiming at is to get sufficient tonnage and sufficiently low costs to enable us to carry on without protection. Our conditions and the conditions of a new plant are different.

Mr. Mathias.—What would be a reasonable unit for completely new plant which is producing the same quality of stuff?

President.—What would be a reasonable unit for a new-comer?

Mr. Alexander.—We do not know what the product will be from 420,000 tons.

President.—Products do not matter. The new-comer has to find out what it is going to pay to roll in this country.

Mr. Alexander.—I have to find out the products first.

President.—I am asking you generally. Taking the kind of steel that is required in this country, would a unit of 420,000 tons be an economic unit? I am only asking for an estimate.

Mr. Alexander.—I can do that for you.

President.—To give us just a reasonable idea of what it ought to be.

Mr. Alexander.—Yes.

The Plate Mills.

President.—As regards the plate mill, the original estimate was 48,000 tons. Now you have come down to 25,000 tons.

Mr. Alexander.—We have not the market for plates.

President.—The plate mill has become too big for you, is it not? It is a plate mill that ought to roll 80,000 tons a year and you use it for 20,000 tons only. It has become expensive now. I did not expect to find that there would be less demand in India for plates.

Mr. Peterson.—There is a very small demand in India for plates.

President.—Not if the wagon building industry developed.

Mr. Peterson.—Then, there would be a big demand.

President.—Those who use steel for fabricating purposes will be your principal customers. We gave them 25 per cent. protection. As it happened, owing to the drop in prices, exchange and other things, they now say that it did not prove sufficient.

Mr. Peterson.—There is a large import of fabricated steel.

President.—Supposing the fabricated steel industry is able to absorb the normal quantity of steel, is not your estimate of 25,000 tons an under-estimate?

Mr. Alexander.—We only estimated according to our sales at present.

President.—The mill is capable of producing 80,000 tons you are only rolling 20,000 tons.

Mr. Alexander.—The plate mill was a mistake from the very beginning.

Mr. Peterson.—It was put up because we thought that they were going to build ships and other things in this country.

President.—What industries are likely to use your plate mill products?

Mr. Peterson.—Engineering firms and wagon builders mostly.

President.—The engineering firms would use them, I suppose, for building, tanks, bridges and things like that.

Mr. Alexander.—Bridges, tanks, pontoons, river boats, ships, etc.

President.—Supposing you were to put up a new plate mill, what is the smallest unit that you can have?

Mr. Alexander.—Practically the same size.

President.—It is inevitable?

Mr. Alexander.—Yes.

President.—If you have a plate mill, it ought to be of the same size as yours. The only other thing is not to have a plate mill at all.

Mr. Alexander.—Quite.

President.—The point I want to make is that in your development programme you are not aiming at a market which is much more easily available. You have got a market for nearly 260,000 tons of galvanized sheets alone. We don't know how much of that is in Calcutta.

Mr. Peterson.—The great bulk of that is in calcutta.

President.—In your development programme you did not appear to concentrate enough on this.

Mr. Peterson.—The point there is that we have already got the plant to produce the other products and if we are to increase the output of sheets we would have to put up a fresh sheet mill.

President.—As far as I can see the sheet mill can be extended.

Mr. Peterson.—I don't think that we can. We can't increase the mills without completely re-building the whole thing and therefore shutting the mill altogether. Our first idea was to duplicate the entire mill, but we found that it would be very expensive. It takes a very long time to train the labour and we have not so far found it a particularly profitable business.

President.—The point is that if a new steel works started in the country, it would find a very good market for corrugated sheets, is not that so?

Mr. Peterson.—Mr. Alexander and I would not advise them to start a sheet mill.

President.—Of course they will learn by your experience.

Mr. Peterson.—The existing sheet mill cost us Rs. 63 lakhs and we cannot increase it without practically the same expenditure.

President.—I suppose there is not much demand for black sheets by themselves?

Mr. Peterson.—Not so much. The great demand is for corrugated galvanized sheets.

Dr. Matthai.—I suppose the real difficulty about the sheet mill is the greater capital cost and that it requires more skilled labour than in the other departments.

Mr. Peterson.—That is so. There is another difficulty and that is the disposal of the scrap, the same difficulty that the Tinplate Company are finding.

President.—We don't know what the total demand in the country for steel would be now but we estimated it at about one million tons all told in our first enquiry. Nearly 20 per cent. of that is sheet, so that if sheets were not manufactured in the country there is no room for another steel works of your size on these figures.

Mr. Peterson.—Quite so.

President.—So that sheets will have to be manufactured in this country if the industry is to develop.

Mr. Peterson.—What we feel is that we had better get the results of the expenditure on this plant before we develop further. At present we are not getting the results we anticipated from the sheet mills. I personally anticipate that the consumption of steel will go up to a very great extent if we have increased production and lowered prices.

President.—Assuming that the estimated figure is somewhere near one million tons of steel then there is hardly any field for expansion without sheets.

Mr. Peterson.—That is the difficulty.

President.—You want to get the whole of the rail market, is it not, and also the structurals?

Mr. Peterson.—From our point of view we naturally want to manufacture the material that is most easy to roll.

President.—Considering whether new capital would be attracted to the industry one must see whether there is a market for the industry in the country or not, and you don't consider that sheets are a good market at present?

Mr. Peterson.—There is a good market.

President.—Not so far as you are concerned.

Mr. Peterson.—Quite so. Our costs are too high at present.

Wire Rods.

President.—The only mill that remains to be considered is the one that you have not built yet, that is the Wire Rod. There the position is difficult, and I don't want to go into very much detail now because we don't know what the wire nails people might do in the future. But meanwhile I would like to know what your position is. As far as I can gather, on the new merchant mill you cannot make wire rod without suffering heavy loss, isn't that so?

Mr. Alexander.—Yes.

President.—When the Greater Extensions were planned you intended to go up to quarter inch rods. Even that you cannot make?

Mr. Alexander.—Not economically.

President.—There is the fact that the wire nail industry started on the basis that you intended to manufacture it. Now, supposing they insisted upon your supplying the wire rod when the only alternative for you at present is to alter your old mill?

Mr. Peterson.—Commercially if they insist on our supplying them wire rods, we would simply buy and supply these instead of incurring a loss on our mills.

President.—You say the alterations necessary to produce sufficient wire rods to be of any use to the Wire Products Ltd. would cost you between Rs. 75,000 and Rs. 1 lakh.

Mr. Peterson.—Yes.

President.—You then say that there would be a loss in the cost of producing the rod on the old mill after the alterations are made of about Rs. 17 per ton and that on 3,000 tons the loss would be approximately Rs. 51,000 and on 5,000 tons annually the loss would be Rs. 85,000. If you are to fulfil your obligations do you consider a sacrifice of Rs. 51,000 a year an excessive sum?

Mr. Peterson.—We don't consider it excessive. But it is a pity that there will be a loss of Rs. 17 a ton on 5,000 tons in addition to the cost of operating the old bar mill. In any case we get there a penalty of Rs. 25, so that these rods make the penalty Rs. 42 a ton.

Dr. Matthai. If you were to make these alterations, it would not be worth their while to buy from you at the present prices.

Mr. Peterson.—I think not. Our real difficulty there is that if we are to close down the bar mill it would be a pity to start this rolling $\frac{1}{4}''$ rods on it at all. It seems much more economical to put up a new mill which really will serve the purpose. Probably it would not take longer than nine months to do the one than the other.

Dr. Matthai.—It would cost you Rs. 15 lakhs?

Mr. Peterson.—That would be more economical than losing Rs. 1,25,000 a year.

President.—You have not included the new mill in your new programme.

Mr. Peterson.—It is not in the estimate. It was put in afterwards.

President.—Is wire looked upon as a material required for national defence?

Mr. Peterson.—I think it is.

President.—In that case if it were necessary to manufacture wire in this country then the question of additional cost . . . . .

Mr. Peterson.—I think a much more satisfactory way of manufacturing it is to have this new mill. If we are making these alterations in the bar mill it is only a makeshift. That is not sound practice. If we have got to supply wire in large quantities as during the war this sort of arrangement will not serve the purpose.

President.—So far there is nothing in the programme about it?

Mr. Peterson.—You will find it on page 11 of the representation, 3 (*b*).

President.—It is not in List A or B.

Mr. Peterson.—We intended to put it in. In fact if the Wire Products Ltd. are going on with their work we will put it up at once.

President.—Is that the position so far as you are concerned?

Mr. Peterson.—That is the position. They are at present waiting for the publication of the report on the question. We will put it in the earliest part of the programme as soon as this question is decided.

Dr. Matthai.—That new mill will also supply materials for agricultural implements?

Mr. Peterson.—The chief reason for putting this up is to supply cotton ties, and jute ties used for baling, and to roll lighter sections including those required by all manufacturers of drawn steel wire. There is one thing I have not mentioned in the representation, and that is that the special sections which are rolled at Jamalpur by the East Indian Railway can very easily be rolled in this mill. What actually happened was that Mr. Alexander drew up this programme of the estimates before this question arose, and we had no time to alter it right through, but our intention now is to put it well forward in the programme if we go on with it at all.

President.—I think it is of very great importance that industries depending on you for raw materials should be able to get them from you.

Mr. Peterson.—It is really from that point of view that we think it is much more satisfactory to establish a new mill which can supply anybody than to make a makeshift arrangement in the old mill to supply only one company. We have got to be careful about the supply to the market generally.

President.—But if these people stop manufacture there is no market. This industry has already reached the manufacturing stage. If it is closed down, you must expect that somebody else will take it up. The point is that this was one of the industries which got protection on the ground that they were using indigenous raw material.

Mr. Peterson.—I think the erection of this mill is the best way of enabling them to get it.

Dr. Matthai.—What is the difficulty with regard to the merchant mill?

Mr. Peterson.—One of our difficulties is that we are not really sure that these people want us to supply. If it costs more, they won't ask us to supply.

President.—If it is a question of using in an industry imported raw material, that stands on quite a different footing. As you know, it does not strictly come within the conditions laid down by the Fiscal Commission.

Mr. Peterson.—It is a question for them. If they say "We insist on your supplying wire rod" we will do our very best. They may say "It pays us better not to ask for protection but to buy imported rod." Therefore we

would not be justified in making these alterations. Until they make up their mind, we can't say one way or the other. They have not done so yet.

Mr. Mathias.—Where are they getting the rods from?

Mr. Peterson.—They are buying Belgian rods.

President.—There is one other thing. There is this big German combine for wire rod and all kinds of wire products. It is their policy to capture the whole of the world market so far as wire products are concerned. If that should materialise, the only ground on which the country may manufacture wire products is the ground of national defence.

Mr. Peterson.—It is necessary to have both wire and nails. I think it is really part of the essential requirements of the country especially the manufacture of wire.

President.—If you take that view, then the other consideration becomes secondary.

Dr. Matthai.—It would be on a different footing from that on which we placed fabricated steel. In the First Report the Tariff Board gave protection to subsidiary industries, because they used raw material produced in the country. If subsequently we take the line that wire deserves protection because it is important for national defence, we are putting the question of protection on a different ground and the former ground ceases to be of importance. As things stand at present, it is not worth your while to produce rod and it is not worth their while to buy it.

Mr. Peterson.—It is not worth our while unless we put up this new mill. Whether it is worth their while to buy rods from us under the existing contract, I think is very doubtful. This is one of the contracts which is to the advantage of the Steel Company. We took the mean of the American and the English prices. We did not consider the fact that that meant that they must necessarily pay a higher price than the lowest price at which their competitors could buy and therefore it would be to their disadvantage unless the two prices were identical.

President.—So far as the English price is concerned, it is getting very much smaller.

Mr. Peterson.—Our contract price is the mean between two prices and therefore must always be higher than the lowest of the two.

President.—The British price may probably reach the Continental level soon. Then the American price would not be as high as it was in 1923.

Mr. Peterson.—Unless the two prices are the same, they must pay a higher price. That is the difficulty from their point of view. If the margin is very slight, it would make very little difference.

President.—If we had another company coming into existence, it would be a different matter altogether.

Mr. Peterson.—I think this mill would be a very useful addition to the equipment. We would go ahead as soon as we knew that these people required the material.

Dr. Matthai.—The syndicate organisation in Germany has been more active about wire rod than practically any other steel product.

Mr. Peterson.—I don't know. On very small sections they are very well equipped and organised.

Dr. Matthai.—The margin they allow on wire rod for export is bigger than that on any other product.

President.—As regards the additional production, Mr. Peterson, have you satisfied yourself that you have a market for all your output?

Mr. Peterson.—I think so.

President.—Of course your market is more or less Calcutta and upcountry.

Mr. Peterson.—Yes, the Ganges valley is the market for our products. There is a certain amount of export to towns on the coast. We go as far as Lahore and Nagpur. We send also a certain amount of materials to Bombay.

President.—In 1923-24 you were thinking of an output of 420,000 tons in which you had included 150,000 tons of rails. Now the output is going to be increased by nearly 33 per cent.

Mr. Peterson.—Ultimately.

President.—And the rails have not come up to expectations and having regard to these two factors what I want to know is are you satisfied that you have got a sufficient outlet?

Mr. Peterson.—We think so. Let us take item by item. In 1933-34, we have estimated for 260,000 tons of rails and structurals on the new 28″ mill.

President.—That assumes that as at present estimated the demand for rails is about 200,000 tons. This means say you must get the whole of the rail orders.

Mr. Peterson.—Yes. You are thinking of the new steel works, aren't you?

President.—I am thinking of the new steel works as well as the policy of the railways.

Mr. Peterson.—In England they are not very keen on getting rail orders. A new steel works would probably not put up a new rail mill at all. It has an ample market outside rails. In England and other places, they roll rails in order to bring their overhead costs down. They don't make a big margin of profit on rails. I will take our full production.

60,000 tons structurals.—We can easily sell this. There is a big market for structurals in India, about 100,000 tons.

120,000 tons of bars.—Can be very easily sold. 25,000 tons on the bar mill, is light structurals and fishplates. There would be no difficulty in regard to that.

25,000 tons of plates.—We can very easily sell.

55,000 tons of sheets.—We can very easily sell.

50,000 tons of sheet (tin) bars.—50,000 tons of sheet bars will be sold to the Tinplate Company.

25,000 tons of sleepers.—The market is assured so far as we are concerned, by the contracts

Mr. Mathias.—You anticipate an increase in the demand for rails and other things owing to the railway extensions.

Mr. Peterson.—Yes, there is bound to be an increase in the demand. We are for instance practically certain to get all the orders for rails for the Central Coal Fields Railway when it is built.

President.—Owing to the special location of the Steel Industry, there is this difficulty that I want you to explain.

Mr. Peterson.—The great steel market in India is the Ganges Valley.

President.—You have taken possession of it already.

Mr. Peterson.—There is a big surplus.

President.—You have got to sell this 560,000 tons of steel more or less in this market. If any other new works are to be established, they must also come into the same market unless the protection was so high that they could go to Bombay, Karachi, Burma and other places.

Mr. Peterson.—You took the total imports of steel at one million tons.

President.—Of the kind of steel that can be manufactured in India.

Mr. Peterson.—Including the fabricated steel before the war it was estimated at 1½ to 2 million tons. During the war of course the imports fell off and the period of high prices forced the consumption down. It is now again going up.

Dr. Matthai.—It was about a million last year.

Mr. Peterson.—In the last two months, March and April, the increase in imports has been very marked. In spite of protection and in spite of our increased output, the actual imports are going up.

Dr. Matthai.—The total amount of protected steel is 565,000 tons.

Mr. Peterson.—That includes fabricated steel.

Dr. Matthai.—That bears out the estimate of one million tons.

Mr. Peterson.—In 1923-24 the import was 871,201 tons.

President.—It would include a lot of steel which you can't manufacture.

Mr. Peterson.—Yes. But this excludes our own output.

President.—This is basic steel.

Mr. Peterson.—The point I am making is that total imports have not gone down in spite of protection and our increased production.

President.—The increase in imports might have gone up in those kinds of steel which could not be manufactured in this country such as boiler plates, etc.

Mr. Peterson.—Most of this is mild steel in some form or other.

President.—It might include wheels and axles.

Mr. Peterson.—They could not amount to very much.

Dr. Matthai.—The extraordinary feature of protection in India is that the import of protected steel has increased and that the import of non-protected steel has gone down.

President.—I was just trying to point out how the position lay as regards the market.

Mr. Peterson.—The consumption will be at least double in 10 years.

President.—You are very sanguine indeed.

Mr. Peterson.—We have been passing through 5 years of extreme depression.

President.—Last time when you gave evidence I think you told us that you contemplated going in for other things, such as forgings, bolts, nuts, strips, etc.

Mr. Peterson.—The strip mill is the hoop and strip mill which I was talking of. We will probably eventually start making all these when we have got the steel plant as we want it. We have two very well equipped machine shops. As regards bolts and nuts, we have a certain number of bolt and nut machines. We shall probably erect them in the Agricultural Implements Factory sooner or later.

President.—That is all for the future.

Mr. Peterson.—All that is still possible. As it pays, we will put it up. We want to do these essential things first.

President.—Then as regards " extras."

Mr. Peterson.—Do you mean the price extras?

President.—Have you made any alterations in your system as regards that?

Mr. Alexander.—No, I don't think so.

President.—You have got the same extras as before.

Mr. Peterson.—The ordinary English extras.

President.—With certain modifications.

Mr. Peterson.—We simply follow the custom in the Indian market.

President.—So that your extras are local extras. That is what it comes to.

Mr. Peterson.—Indian extras.

President.—How do they work out in the end?

Mr. Peterson.—Do you mean on a matter of price?

President.—That applies to bars and structurals.

Mr. Peterson.—Yes. It depends very much on the class of orders. In some orders from the Continent they will import a certain number of sections without any extras at a flat price. In a case of that kind we could compete against them without any extras. But generally speaking we quote the ordinary fair price *plus* the extras. You have a list of our extras, haven't you?

President.—In taking the c.i.f. prices, are we to suppose that with the extras you would get the same price here in the country as foreign steel? How are we to compare that?

Mr. Peterson.—We don't give any extras.

President.—I just want to know how it works out, whether you get the price you ought to get on the whole.

Mr. Peterson.—We get a price which is slightly over the imported price including the extras and everything else.

Labour.

President.—As regards labour generally, you have given us these figures in different tables. I really do not know what reduction there is really in the number of men and whether really the numbers have been reduced as much as they should be.

Mr. Peterson.—Is it the number you want?

President.—We want numbers.

Mr. Peterson.—It would be difficult to compare numbers as the output is increasing. A fair comparison can only be got by dividing the tonnage by the number of men and getting the cost of labour per ton or the production per head.

President.—What is the total labour in the works?

Mr. Alexander.—Including coolies the total labour in the works is 25,000. Of that, the monthly paid would come to about 16,000 or 17,000 and weekly paid about 10,000.

Mr. Peterson.—It is impossible to compare numbers or wages with 1921-22, because the production is constantly increasing. All that you can actually compare is the tonnage per head or the cost per ton.

President.—What I feel when I go round your works is that there are far too many men about.

Mr. Peterson.—There are far less men working in the mills now than 5 years ago.

President.—I really want to know whether there has been any reduction.

Mr. Peterson.—We are trying to show that in these statements.

President.—There is no evidence that you have not far too many men.

Mr. Alexander.—There has not been any large reduction in Indian labour. We are getting a bigger production per head.

President.—Your labour costs have probably come down. That is due to increased output, I think.

Mr. Alexander.—Yes.

President.—That does not necessarily show that you are not employing more men than you should.

Mr. Peterson.—We have already given you the tonnage per head and that has gone up.

Dr. Matthai.—You are employing the same number of men to produce a larger output.

Mr. Peterson.—That was the idea in these statements. We gain as our output increases. If you reduce, what will you compare it with?

President.—Compare it with the number of men previously employed.

Mr. Peterson.—If we double the output in the interval?

President.—I have noticed that not only in your industry but in every industry there are far too many men employed.

Mr. Peterson.—That is perfectly true.

Mr. Alexander.—That is due to the inefficiency of Indian labour.

President.—I am speaking generally.

Mr. Peterson.—We are getting away from that now. Take statement No. 77. The tonnage per head per annum has risen from 142 to 359, which is equivalent to a reduction of nearly 50 per cent. in the number of men.

President.—Take your Greater Extensions. Where the output has gone up, you have got labour saving appliances. They might have carried 10 tons before and they may be carrying 100 tons now. It is the machine which may have raised the output and not the men.

Mr. Peterson.—That is the object of the machine.

President.—It is not a real comparison where machinery is doing more.

Mr. Peterson.—Let us take the open hearth. In 1923-24 the tonnage per head per annum was 120 and in 1925-26 it was 142. We got 22 tons more per head out of men. There has been no increase in wages.

Mr. Alexander.—See the column "Total labour" in the same statement No. 73.

	Total labour.
1923-24	1,617
1924-25	1,611
1925-26	1,554

That is a reduction in the number of men.

President.—I want to know whether you have introduced any labour saving appliances since we enquired last.

Mr. Alexander.—Nothing except in the new mills.

Mr. Peterson.—We have put an officer specially on this to sort out the labour force for each department and in certain cases that has led to a considerable reduction.

President.—I am afraid, I don't see it.

Mr. Alexander.—Take the coke ovens—statement No. 71. In 1923-24, total labour was 3,238 and in 1925-26 it was 2,386—a reduction of nearly 1,000 men in two years. There has also been an increase in the tonnage per head per annum from 189 in 1923-24 to 291 in 1925-26.

President.—You have got new appliances in the new coke ovens for handling materials and you have shut down the Evence Coppee ovens.

Mr. Peterson.—That is the only way we can reduce our labour by introducing more machinery.

Dr. Matthai.—There are just two points. You can reduce your labour by the employment of labour saving appliances, and you can also reduce your labour by getting the same labour unit to turn out more work by manual labour. Therefore the two things are the employment of machinery and the improvement of skill. The point that the President has raised is that all your reduction in labour has been simply due to the employment of machinery and that labour has not improved.

Mr. Peterson.—Let us take department by department.

President.—Take the coke ovens.

Mr. Alexander.—The Coppee ovens have been shut down. So, that does not tell us anything.

Mr. Peterson.—I think it does. You are getting a larger production.

President.—It is the machine that is getting you a larger production.

Mr. Peterson.—That is always how labour by being able to use machinery has become more efficient and more skillful in other countries. That is how labour wages have risen and the cost of labour per ton has been reduced. It is the only way in which it can be done.

President.—In the blast furnaces, there has been a reduction but you have been working one blast furnace less.

Mr. Peterson.—There again, there has been an increase in tonnage.

President.—What I want to know is this. So far as the reduction of labour goes, will you give me some general idea as to what new appliances you have introduced in order to economise your labour since we last reported.

Mr. Alexander.—Practically nothing except putting into operation new units of the Greater Extensions. What we have been able to do in the matter of reduction of labour cost is to get more work out of the force, by making them work more efficiently. I think I should explain it to you. You want to know why we have not reduced labour more, taking the plant as a whole. There are three or four reasons why we cannot. The first is the inefficiency of Indian labour which I think you will admit.

President.—Inefficient in this sense that the labourer does not give you more than you could buy for the money he gets.

Mr. Alexander.—The second thing is absenteeism. You can if you wish consider that as inefficiency. Thirdly, we are constantly extending the plant and increasing the production and consequently we must continually be training men for the new units.

President.—That is one of the points. You are making these extensions in bits. The result therefore has been that you always had to employ more men than you need.

Mr. Alexander.—That is right.

President.—That is perhaps a reason.

Mr. Alexander.—When we put in additional equipment, we must have men to operate it. We have to take them on, before we put in the equipment, in order to give them two or three years' training. If a man leaves us, we cannot go outside and get a man. We have to train him ourselves.

President.—What else?

Mr. Alexander.—That about covers all my points.

President.—Then, I think that we will have to wait until you have completed your extensions.

Mr. Alexander.—That is what it amounts to. We will have to complete the plant first.

Mr. Peterson.—May I answer Dr. Matthai's question here. There are two factors in the matter of reduction of labour, *viz.*, the use of machinery and the actual improvement of labour. The use of machinery we can, and do, employ where the tonnage has gone up. The improvement of labour in the Steel Works is a thing we cannot do in two years. It is a matter of 25 to 30 years. It can only result from better education, a higher standard of living, and greater physical and mental efficiency.

Dr. Matthai.—We cannot at present get much further with this question because all this fairly large reduction in labour that is shewn in your statements has practically coincided with the introduction of new machinery. We have really no evidence to show how much of this reduction is due to men and how much to machinery.

Mr. Alexander.—We are simply training them. We do not know what they will do.

President.—I think that there is too much cooly labour carrying coal and other things to-day.

Mr. Alexander.—There is a good deal too much.

President.—I don't see that there is anything in this programme to show that you are going to do away with it.

Mr. Alexander.—We have elaborate coal loading and unloading equipment in some departments but in others the method of handling material is very inefficient.

President.—I have seen cooly women carrying baskets of coal on their heads.

Mr. Alexander.—We have our own special wagons, drop bottom wagons, but we cannot get many such wagons from the railways.

President.—In a big works like yours, this kind of manual labour is quite out of place.

Mr. Alexander.—Unfortunately the original plant was laid out with the object of using this cheap labour.

President.—You have not got space in the old plant for remodelling.

Mr. Alexander.—We cannot reconstruct the whole original plant. If we did, we could do better. Take the old coke ovens. Here the women carry coke on their heads. We could remodel that but we have other work to do first which is more essential from the profit view point.

President.—I am only suggesting to you that though in the new mills there is everything that is modern, still outside the new mills and in the other subsidiary departments there is far more manual labour than there need be.

Mr. Alexander.—We need them, or else we would have discharged them.

Dr. Matthai.—What is the standardisation that you were speaking of?

Mr. Alexander.—A regular labour force for each department worked out by the labour officer.

Dr. Matthai.—With a view to what?

Mr. Alexander.—With a view to fixing the standard labour force employed in each department and also the rates.

President.—What do you estimate the surplus that you have always to maintain for absenteeism of labour?

Mr. Alexander.—About 10 per cent.

President.—That you have always to keep in excess.

Mr. Peterson.—About two or three years ago, it was much higher.

President.—I am talking of now.

Mr. Alexander.—10 per cent. absenteeism, and 10 per cent. for extensions.

Dr. Matthai.—10 per cent. is your absenteeism.

Mr. Alexander.—It will be more than 10 per cent. It will be about 15 per cent.

President.—Does that affect your wages bill?

Mr. Alexander.—We pay them when they are absent. They are allowed a month's privilege leave in a year.

President.—By absenteeism I understood to be French leave.

Mr. Alexander.—Being off duty for any reason.

President.—You are not affected much by absenteeism.

Mr. Alexander.—We have to have extra men to take their place.

Mr. Mathias.—Do you mean leave reserve?

Mr. Alexander.—That is what it is.

President.—That is not an extra item.

Mr. Alexander.—We have many men absent from duty because of Hindu or Muhammadan festivals, etc. We have to carry extra men; otherwise our production would suffer.

Dr. Matthai.—This reserve is much greater than the corresponding reserve, say, in America.

Mr. Alexander.—Far greater.

President.—There also you will have a leave reserve.

Mr. Alexander.—Here it is much bigger. There it is 5 per cent., and here it is 15 per cent.

President.—With regard to the welfare of labour, it has become a very important subject. In the Assembly a good deal is said about the conditions of labour and I want to get some idea as to what you are doing for labour as regards housing, etc. I take it that in the works you have about 15,000 to 16,000 men who are on monthly wages. These are the people for whom you would ordinarily provide accommodation.

Mr. Alexander.—Yes, and we provide *bustis* for coolies too.

President.—First of all, let us take the monthly paid labour. Out of that, for how many have you provided housing accommodation?

Mr. Alexander.—I could not give these figures.

Mr. Peterson.—We provide for 35 to 40 per cent.

President.—Where does the rest of the labour live?

Mr. Peterson.—There are other houses in the neighbourhood. During the past three or four years, the Company has not been able to build any more houses. This year, we have set aside a substantial sum of money—about Rs. 1½ lakhs—for the building of houses for artisans.

President.—I spoke to Mr. Temple informally about it and I suggested to him that it would be better if he gave the Board a short note pointing out the improvements made since we last enquired.

Mr. Peterson.—We have also set aside a sum of Rs. 3 lakhs for the improvement of town, drainage and roads.

President.—You have also a scheme to enable them to build houses for themselves.

Mr. Peterson.—We have arrangements of that kind. We give them land.

President.—Has any advantage been taken of that?

Mr. Peterson.—To a limited extent, advantage has been taken of that. If you want statistics we can supply them.

Mr. Alexander.—In future it will be greater because we have changed the terms of the lease.

President.—How do you charge rent from those who occupy your houses?

Mr. Peterson.—3 per cent. on the capital cost; that is how it works out to us. The rent is charged according to the type of the quarter, 2 roomed, 3 roomed, 4 roomed and so on. I can't say what is the actual rent charged for each type.

President.—We don't want a very elaborate account but we just want to discover the position as it is now, as regards housing, sanitation, hospital arrangements and so on. First describe what arrangements you had in 1921-22 and how far you have developed them. As regards the Technical Institute you have already given a note.

Dr. Matthai.—When you are able to start the new laboratory you mention here it will really become a very important centre for instruction in metallurgy.

Mr. Peterson.—Yes. It is a very essential part of the training.

President.—This brings me on to another question. A good deal of criticism is made about the Indianization of employés. I have not got anywhere in these statements the total wages of the covenanted labour.

Mr. Peterson.—We have given it department by department.

President.—What we want to have is the wages of the covenanted imported labour.

Mr. Alexander.—Department by department or for the works as a whole?

President.—I suppose you will have to go department by department. First of all give the total number of your covenanted men and their pay, as the position stood in 1921-22 and as it stands now; then the bonus. Have you made any changes in the bonus system?

Mr. Alexander.—It is continually changing. As the production increases the bonus is continually altered.

President.—You had better give us some idea of how you pay the bonus.

Mr. Alexander.—The best thing we can do is to give you a bonus statement. A bonus statement is prepared at the end of each month showing the name, rank and bonus earned by every covenanted officer. We can give you that statement complete for each year with all the names if you want.

President.—We don't want the names.

Dr. Matthai.—Last year you gave us a statement. You said "From the 1st April 1925 to the 31st March 1927, we expect to dispense with a further 20 to 25 covenanted hands; out of these—

One will be from the General Staff.
One will be from the Mechanical Staff.
One will be from the Brick Staff.
Two will be from the Bessemer, and
15 to 20 will be from the Rolling Mills."

Mr. Alexander.—We have eliminated about three times that number.

President.—Then give the total number of covenanted men employed in each department year by year; then give the bonus that you pay.

Mr. Peterson.—The position of two departments may be entirely different. In the interval the tonnage in one may have gone up enormously and the bonus may have increased four or five times and unless you know the reasons you won't understand the increase in the bonus.

President.—The thing that we really want to know is the addition the bonus makes to the pay.

Mr. Peterson.—We would give you wages per head per ton for the covenanted staff and the bonus per head per ton in each department. Supposing there was a post which was formerly occupied by a covenanted hand but has now gone to an Indian, you might show that also.

Mr. Alexander.—I can give you those figures.

President.—Then you will show how in each department an Indian has taken the place of a covenanted man. You see, the Assembly wants to know how the industry is being Indianized and that is one of the ways of showing it. Then as regards the scales of pay, I understood last time that you had two scales of pay; that is to say, an Indian holding a corresponding job got two-thirds of the covenanted man's pay.

Mr. Alexander.—That is what we were aiming at.

President.—What is the position now?

Mr. Alexander.—In some instances an Indian gets more than two-thirds of a covenanted man's pay. For example, Mr. Gupta was getting Rs. 1,750 and the covenanted hand he replaced was getting Rs. 1,000.

President.—The allegation has been made against the Tata Iron and Steel Company that there is a lot of money spent on imported labour which if replaced by Indian labour could be saved.

Mr. Alexander.—That is where the labour cost comes in. We are reducing the covenanted labour as fast as possible.

Presidnet.—To-day your total European wages bill comes to, say, Rs. 36 lakhs a year. Supposing all the departments were Indianized you can do with Rs. 25 lakhs and the saving will be so much. That is the kind of statement I want.

Mr. Alexander.—The saving would be about Rs. 12 lakhs.

President.—In every department practically you have an Indian and you know what he is getting and you know what the corresponding European is getting. You can show, for instance, that 5 covenanted men employed, say, on the Blast Furnace, get Rs. 500 each; there are 2 Indians employed in the same department and they get, say, Rs. 350 each on the same work. I don't think it is so very difficult.

Mr. Peterson.—Take the sheet mill. We brought out about 69; we have got rid of 37. We have replaced them not by covenanted hands, not even by men of the officers of the covenanted class; we have replaced them by artisans.

Dr. Matthai.—Then you give us a statement based on the actual difference between the salaries drawn by the European Officers whom these people replaced and the salaries drawn by these people.

Mr. Alexander.—A statement showing what savings have been effected since the covenanted staff was at the maximum. I think that is the best way to give it.

President.—As regards the progress of Indianization, I don't believe in any theory based on the number of years. I don't believe in it honestly.

Mr. Alexander.—I can give you figures. Our maximum covenanted staff was 229 in September 1924. To-day we have 160. That is a reduction of 69 in 18 months.

President.—How many Indians have been added?

Mr. Alexander.—One Indian for each European and sometimes two or three Indians for each European in some departments.

President.—That is important.

Mr. Alexander.—There is a reduction of 69.

Mr. Peterson.—That would go on increasing as the students come out of the technical institute.

President.—In this list regarding the Jamshedpur Technical Institute, are these the men that you have actually employed?

Mr. Alexander.—These are the men who were actually trained in the Institute and now work in the plant under an agreement.

President.—Do they correspond to some of the men imported?

Mr. Alexander.—Yes.

President.—There you have got a good instance.

Mr. Alexander.—These are the cases we have given you.

President.—I think these two last pages of the printed statement show the actual men who are employed in the works.

Mr. Alexander.—I can't tell you in each case just whom they replaced.

President.—What I wanted you to show is this. The imported men were each getting Rs. 500. These people are paid Rs. 300. If you give instances with reference to these men, we will take them as more or less typical of the others.

Mr. Alexander.—We will give it to you right through for the 69 men. There has been a reduction of 69 men during the last 18 months.

Dr. Matthai.—You reject practically 50 per cent. of your technical men.

Mr. Peterson.—Yes.

Dr. Matthai.—They don't come up to the standard.

Mr. Peterson.—We consider that as very successful. When I framed the original scheme, I said we would be lucky if we got one out of five. It is a very high standard.

Dr. Matthai.—What I mean is you get a large number of applications out of which you make a very careful selection—and still 50 per cent. are found to be unfit.

Mr. Peterson.—We are bound by the conditions to take a certain number of men from particular provinces.

Dr. Matthai.—The largest number being taken from which province?

Mr. Peterson.—Bihar and Orissa, because they give the largest grant.

President.—The only things that remain are the collieries. Who is now in charge of the collieries?

Mr. Peterson.—Messrs. Kilburn and Company are the Managing Agents. They would give you any technical information you want. Formerly Messrs. Kilburn and Company came directly under Bombay, but now they come under the General Manager.

President.—The last time we eliminated the collieries.

Mr. Peterson.—You did.

President.—The only point that is really important is this. In making the future estimate of the cost of coal, I think it is better to base the estimate

on your actual raising costs *plus* the depreciation and other things on the written down value of the collieries.

Mr. Peterson.—There is one qualification there. Our raising costs will be very much below the average raising costs of Jharia because we are the only people who have equipped our collieries. The question is at what rate we can buy coal from outside.

President.—At least we can fix what we may call the limit of safety.

Mr. Alexander.—We can give you that.

President.—There is no longer any conjecture as regards your cost *plus* the overhead charges. Then we know that we should be right within a certain figure. Whereas if we try to make an estimate as to what the cost of coal generally is going to be, it would be conjectural.

Mr. Peterson.—The point is our total raising cost would be somewhere about Rs. 3-8-0 or Rs. 3 at present. That will be a rupee or Re. 1-8-0 below the average cost of Jharia.

President.—Last time the difficulty that we found was that your raising costs were high, because your output was low. Now if your output has gone up, it makes for the working of the collieries economically. That objection doesn't remain any longer.

Mr. Peterson.—It comes the other way. Our costs have come down below everybody else's. Instead of being too high, it is now too low. We have got to ascertain the price at which we are going to buy.

Mr. Alexander.—And the proportion of our coal to outside coal is going to be less instead of greater. We don't get the advantage of the reduction in the cost of our coal by increasing our output because we use such a large proportion of outside coal.

President.—Why is it so?

Mr. Alexander.—Our contracts call for the output of outside collieries, and the more they raise the less we can raise ourselves. We have already shut down one of our collieries.

President.—Which colliery?

Mr. Alexander.—Sijua.

President.—It would be just as well if you gave us your costs.

Mr. Peterson.—Shall I give you our best cost from our best colliery?

President.—You might give us the average raising cost for Jamadoba. Last time we found a great deal of difficulty about raising costs. By " raising costs " we mean all costs except overhead charges and profit.

Mr. Peterson.—I will send you the raising costs of Jamadoba excluding depreciation, and other overhead charges for last year.*

President.—You will give us the output.

Mr. Peterson.—Yes.

President.—You won't be able to measure the amount of depreciation and profits unless we have the total output of all the collieries.

Mr. Peterson.—Treat this one colliery as a separate case.

President.—Can you give us the capitalisation?

Mr. Peterson.—Capital expenditure on Jamadoba.

President.—You have given us your output for all your individual collieries.

Mr. Peterson.—Are you trying to arrive at the cost of coal at the Works?

President.—These costs would be f.o.r. collieries.

Mr. Peterson.—Yes.

President.—You will have to add Re. 1-8-0 to bring them to the costs f.o.r. works.

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* Supplementary Statement No. 8.

Mr. Peterson.—Are you trying to check the cost of coal in the cost sheets or are you trying to check the estimated future rise. These figures may not exactly tally with the figures given in the cost sheets.

President.—Supposing we have got to make an estimate as to the future, we have to take it on this basis.

Mr. Peterson.—Last time the Mining Engineer was the person who told you. He is really the person who should tell you.

President.—His forecast was not very accurate the last time.

Mr. Peterson.—You are not going to use these figures to check our figures for development, because these will vary. We may be able to raise coal and we are raising coal at Rs. 3 per ton, but we can't use it ourselves.

President.—I want to get an idea as to what price of coal would keep us on the safe side as regards the future.

Mr. Mathias.—What is the reason that has led you to estimate for an increase of Re. 1 per ton of coal each year.

Mr. Alexander.—Merely information received from various people in Calcutta who are in the coal trade.

Mr. Peterson.—I don't think Rs. 5 is an economic price for the raising of coal in the Jharia Coalfields in present conditions.

Mr. Mathias.—World conditions lead to a low price.

Mr. Peterson.—I think the result of the continuance of such a price will be the shutting down of collieries which will result in the price of coal again going up.

Mr. Mathias.—Large numbers of railway collieries are being opened up, aren't they?

Mr. Alexander.—Yes.

Mr. Peterson.—The coal industry has reached a point as regards price at which trade becomes unprofitable. The collieries are not making any profit. They are all losing.

Continued on 18th June 1926.

Consumption of coal per ton of pig iron and finished steel.

President.—I should like to begin with coal consumption generally today. In this statement you have taken the total quantity of coal used and the total production of pig iron. What it comes to is this that the whole pig iron, whether it is sold or consumed in the works in making steel, is converted into finished steel, the surplus pig iron being converted into finished steel at the rate of 2 tons of pig iron to one ton of steel. On that basis, in 1921-22, the coal consumption per ton of finished steel comes to 4·16 tons. I think that last time we took it at 4¼ tons per ton of finished steel.

Mr. Alexander.—I think that you took 4 tons.

President.—In 1925-26, it has been reduced to 3·81 and there is a saving of ·35 tons, which I think is largely due to the new plant coming into operation.

Mr. Alexander.—Yes.

President.—There is also a slight improvement in practice.

Mr. Alexander.—Yes, the coke consumption in the blast furnaces being lower and also savings in some other places.

President.—There is, I think, a saving of 10 per cent. in the blast furnaces.

Mr. Alexander.—Yes.

President.—For 1933-34 the figure you have given is 3·13; that would mean a reduction, over 1921-22 figure, of more than a ton.

Mr. Alexander.—Yes.

President.—On what do you base your forecast?

Mr. Alexander.—Getting more benefit out of the new plant, rolling more steel on the new plant, more fuel economy, using more gas and less coal for the generation of steam, increased output and further reduction of coke in the blast furnaces. We expect another 10 per cent. reduction in the consumption of coke in the blast furnaces.

Mr. Peterson.—On one new blast furnace we have actually attained a coke consumption of 1920 lbs. in one individual month.

President.—What is it due to?

Mr. Alexander.—Better practice as I explained to you the other day.

Dr. Matthai.—Would it be right to suppose that the bulk of the reduction that you anticipate in 1933-34 as compared with 1925-26 would be due to output?

Mr. Alexander.—Yes and to the fact that we are doing all the rolling on the new plant where the mills are driven by electricity.

Dr. Matthai.—The question of practice becomes a subsidiary one.

Mr. Alexander.—Yes.

President.—Then as regards the amount of coal consumption per ton of pig iron, it has come down from 1·80 in 1921-22 to 1·66 tons in 1925-26. It corresponds to better practice more or less.

Mr. Alexander.—That is right.

President.—As far as one can see, you only expect to bring it down to 1·56 tons in 1933-34, and you don't expect very much better results.

Mr. Alexander.—That would be about 6 per cent.

President.—The biggest reduction in this list is steam and gas coal for finished steel which has come down from 2·36 tons in 1921-22 to 2·15 tons in 1925-26.

Mr. Alexander.—By substituting gas for coal.

President.—It will come down again in 1933-34 to 1·57 tons, so that most of your saving really comes from that department.

Mr. Alexander.—Yes, because we expect to change most of the boilers from coal fires to gas fires and use surplus coke oven and blast furnace gas wherever possible.

President.—Here it would, I think, be convenient to take up the question of prices. You have unfortunately given f.o.r. colliery prices.

Dr. Matthai.—Have you any recent evidence as to how your coal consumption per ton of finished steel compared with the American or English practice?

Mr. Alexander.—It is high.

Dr. Matthai.—What is the practice in America?

Mr. Alexander.—Between 2 and 3 tons. It is somewhat lower on the Continent.

Dr. Matthai.—How much?

Mr. Alexander.—I know that some plants are down to 2 tons; in fact, in the case of some plants, it is even less than that.

President.—Would that not depend on the quality of coal?

Mr. Alexander.—We can never get down to what they do with good coal on the Continent or in England or America. I think that Mr. Mather will have some recent figures on that.

Dr. Matthai.—Is it higher in England than on the Continent?

Mr. Alexander.—Yes.

Dr. Matthai.—Taking simply your figures, would your practice be slightly higher than that?

Mr. Alexander.—Yes. I remember that Mr. Mather said in the original enquiry that we should reduce our coal consumption by half a ton at least.

President.—He said, I think, that it should be 2 tons up to pig iron and another half a ton after that.

Mr. Alexander.—Then it was 4 tons. He suggested that we should go down to 3¼ tons, if I remember right.

President.—I don't remember exactly.

Mr. Alexander.—This is what you said in your first report—"The consumption of coal expected is about 4 tons per ton of finished steel."

President.—As regards prices, we must have comparable prices either f.o.r. works or f.o.r. collieries. It is better to take f.o.r. works.

Mr. Alexander.—Yes.

President.—I think that in 1921-22 it was about Rs. 8 at your works.

Mr. Alexander.—Yes.

President.—The best thing is to take it from the cost sheets. You charged the furnaces at Rs. 8. The trouble is that there is a difference between different kinds of coal, but the average, I take it, would be about Rs. 8 in 1921-22.

Mr. Alexander.—In 1921-22, it was Rs. 8 and this year Rs. 8-2-0.

President.—It is fortunate that we have not this complication about coal as regards the future. You have taken for 1926-27 Rs. 5 per ton, f.o.r. colliery.

Mr. Alexander.—What I did was to take the outside coal at this price and then estimated the proportion of outside coal to our own coal and knowing our own coal we arrived at the average cost.

President.—Rs. 5 f.o.r. colliery is equal to Rs. 6-8-0 at your works.

Mr. Alexander.—It would be about Rs. 6-10-0. I reviewed the figures a fortnight ago. The average price of coking and steam coal is going to be about Rs. 6-14-0 for 1926-27.

President.—At the furnaces?

Mr. Alexander.—Yes. Each month when making out the costs we reduce the price of stock coal until it is down to the price of fresh raised coal. We have more than 200,000 tons in stock at the works. In July the cost of coal charged will come down to about Rs. 6-14-0 as against Rs. 8-2-0 last year, the reduction being about Rs. 1-4-0.

President.—Then you give an estimate of Rs. 6 for 1927-28.

Mr. Alexander.—It is just an estimate.

Mr. Peterson.—That is merely a guess.

President.—What guess are we to make, Mr. Peterson?

Mr. Peterson.—You have sources of information which are denied to us. Probably, you will be able to get more accurate figures. Our view of it is that the present price of coal is too low. They must in some way raise the price if they are to continue. The position here is very much the same as in England. In the Jharia coalfields they have practically stopped the raising of second class coal.

President.—On the Calcutta side it is more or less the same. As regards the other parts of India, they could not raise the price of coal unless there was a rise in the world price of coal.

Mr. Peterson.—It is due to the South African price.

President.—So far as the western part of India is concerned, the price must be governed, to some extent, by the price of South African coal.

Mr. Peterson.—We are told by coal people in Calcutta that they are looking for a higher price.

President.—After all the rise of a rupee in the price of coal makes less difference than the drop in the consumption of coal. If you save one ton of coal, you probably save Rs. 8, which is equal to a rise on the present figures of about Rs. 2-8-0 a ton in the price of coal. If you reduce your consumption of coal, the factor of price is not nearly as important as it was last time.

Mr. Peterson.—It becomes less and less important.

President.—But I must say that it is an unnecessary complication to have three different rates from 1926-27 onwards.

Mr. Alexander.—Then this year it will be Rs. 6-14-0, next year Rs. 7-14-0 and the year after, *i.e.*, 1928-29 Rs. 8-14-0.

President.—The figure for 1926-27 is not important, except for the purpose of considering how far protection has succeeded. What we are concerned with is the question of prices from 1927-28 onwards. If you could find facts which would justify us in taking the price of Rs. 8 at the works from 1927-28 onwards, it would make the calculations a bit easier.

Mr. Alexander.—That would increase the price for 1927-28 slightly and decrease the price from 1928-29 onwards.

President.—It would really come to this. For three years anyhow it would work out, on an average, at Rs. 8 per ton, more or less. There is not much in it if you confine yourselves to 1927-28, 1928-29 and 1929-30. Unless we get some more satisfactory evidence we may not go far wrong if we took Rs. 8.

Mr. Peterson.—It is a very fair estimate. The real difficulty is that it is very difficult even for an expert to form a correct estimate as to the price. I personally think Rs. 8 at the works is a fair estimate. From our point of view the real complication is how much of our own coal we can use. We have bought the output of certain collieries and that is an indefinite factor. When the prices are low and the output is large they try to push as much of their coal on us as they can and the proportion of our cheap coal goes down.

President.—The Bengal collieries claim they can sell Jharia coal at about Rs. 6 a ton at the pithead. That would bring the cost at the works to about

Rs. 8. That was what was reported to us during the last coal enquiry. So that it may be safe to assume that it would not exceed Rs. 8 in the next five years anyhow.

Mr. Peterson.—It is never safe to assume anything with regard to the price of coal! But I think you would get contracts at that price for five years. I expect they would do that.

President.—I think if we took an average during this period of, say, 3½ tons, that would be correct?

Mr. Peterson.—An average of 3½ tons at Rs. 8?

President.—Yes.

Mr. Peterson.—We will have an estimate prepared on that basis.

President.—That would reduce it on this side and increase it the other side.

Mr. Alexander.—Suppose we change the heading in respect of the price of coal given in this statement (page 32 of representation)* making it Rs. 6-14-0 for 1926-27 and Rs. 8 afterwards.

President.—On an average consumption of 3½ tons?

Mr. Alexander.—We do not deal with it in that way in working out the detail costs. We have to work out the cost in each department for each year. It comes in the end to 3·18.

President.—Would it be a fair estimate?

Mr. Alexander.—We get about the same quantity, 3·13.

President.—If we take Rs. 6 and add Rs. 1-10-0 the cost above coal, there is not very much difference. Then you take Rs. 7 and add Rs. 1-10-0; that is Rs. 8-10-0. Really there is not very much difference. Instead of 3½ tons at Rs. 7-10-0 you take 3½ tons at Rs. 8-10-0. I don't think you need revise the figures. It comes to the same thing so far as the total average cost of steel is concerned.

Dr. Matthai.—On the basis on which you have worked out this statement, roughly it is on an average 3½ tons, so that it is not worth while going over it again.

Mr. Alexander.—The total consumption of coal is 1,850,000 tons.

President.—You knock off practically half a rupee—10 annas a ton.

Mr. Alexander.—That would make a difference of about Rs. 10 lakhs.

President.—In 1933-34. On the other hand, on the other side it will make a slight difference the other way.

Mr. Alexander.—It would increase the cost of coal slightly.

President.—But reduce the cost of steel. It means the same thing.

Mr. Mathias.—If you spread it over 8 years 3·8 becomes exactly the intermediate figure.

Mr. Peterson.—It is.

President.—We will leave it at that. I think you had better correct this statement.

Mr. Peterson.—You don't want the actual figures worked out in detail?

President.—If it serves any practical purpose you can do so. So far as the average cost of steel is concerned it does not make any difference.

Mr. Alexander.—You want this Table to be revised.

President.—If you think it is going to make any difference you can do so.

Mr. Peterson.—I don't think it would make much difference. There might be a difference of only a few annas.

President.—I took the average for the whole period.

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* See page 28 of Volume II.

Mr. Alexander.—I think we should revise the statement then.

President.—You can do so if you think it worth your while. I think we had better take up these allocations and exhibits now. These exhibits are the detailed costs of the various departments and of the subsidiary operating departments, are they not?

Mr. Alexander.—Excepting the general works expense.

President.—I think roughly what it comes to is this. If you add the figures in the exhibits to the cost of the raw materials chiefly, you get practically the works cost.

Mr. Alexander.—That is right.

President.—I totalled up these exhibits and roughly they come to about Rs. 1,52,00,000. The impression that these exhibits leave on my mind is that the examination of the works costs really depends upon the accuracy of these exhibits very largely and of the allocation system. If these exhibits are not correct and the allocations are not correct then the examination of the works costs sheets is not likely to lead to correct results. That is the position. Up to now we have been going into the works costs on the assumption that these exhibits and the allocations are correct. I don't dispute that these exhibits are correct but their being accurate does not carry us any further because of the allocations. We have got no means of checking the allocations. You take a certain percentage. That percentage is not based on any calculation except a man's idea of how much ought to be consumed and how much is consumed. Take for instance the three main things in the exhibits—fuel, power, electricity. How much power you generate is not measured?

Mr. Alexander.—Consumption of electricity is measured.

President.—Take steam, gas and electricity. So far as the first two are concerned they are not measured.

Mr. Alexander.—Gas does not come in the exhibits.

President.—Gas producers come in.

Mr. Alexander.—This is measured on the coal consumption basis.

President.—On the gas consumption basis it is not measured. You don't know whether you are getting the full quantity of gas from your coal because you don't know how much gas you are getting.

Mr. Alexander.—We know how much coal we are consuming.

President.—You may be using 100 tons of coal but how much gas you are getting you don't know. I can't say that you are wrong necessarily, but there is no means of ascertaining that you are right.

Mr. Alexander. —Nobody measures the gas from gas producer.

Mr. Ginwala.—Gas is the easiest thing to measure. If they don't measure it they are following a system which is not really satisfactory.

Mr. Alexander.—They don't measure the gas, they weigh the gas coal.

President.—There are two things to be considered in this. First, you ought to know whether you are getting enough outturn from your coal, whether it is steam or whether it is gas. Secondly, when you are charging a department, the departments ought to know how much of that is consumed by each one of them. If you take gas, it is not more difficult to measure than electricity. Of course you will require more meters, that is all. But it can be done.

Mr. Alexander.—There are difficulties in the way of measuring producer gas. It is entirely different from measuring electricity or coke oven gas.

President.—My point is that you don't know whether you are getting the full benefit of the materials you are using.

Mr. Alexander.—Granted.

President.—Secondly, you don't know whether you are overburdening some department and whether you are not charging sufficiently another department.

Mr. Peterson.—I think we can distinguish some of the cases. In one case the gas is produced from the gas producer attached to the department itself, and the coke oven gas and the blast furnace gas are charged to several departments. What you really want to get at is the cost and I want to point out that in the case of the producer department gas we take it at the cost of the gas coal. With regard to the other question it is a question of efficiency, not of costs.

President.—I am trying to compare the efficiency of the two producers. I cannot do it.

Mr. Alexander.—In that particular case we can do it. We can compare the producers in the duplex with the producers in the old plant and we know that those on the duplex are more efficient because they consume far less coal.

President.—Supposing you did not have these new producers you would not have known what was happening. The same thing must happen in the old producers.

Mr. Alexander.—We knew that the coal consumption was far higher than it should be.

President.—I was trying to point out that if I were you, I would certainly have a better system of checking my output.

Mr. Peterson.—We are going to install measuring devices everywhere.

President.—I am just trying to point out that it is weariness of the flesh to go into works costs, when you havn't got the basis. The existing system may be right or wrong. In the end the works costs would come to the same thing except this that you have got no means of comparing the various sections as between the different plants. That is the point.

Mr. Alexander.—We know except in the case of coke oven gas.

President.—You know that a man has got fever, but you don't know how many degrees he has until you use a thermometer.

Mr. Alexander.—We know except in the case of coke oven gas.

Mr. Peterson.—If you actually measured this gas, you would not get a more accurate result than you would get from a theoretical estimation of the amount of coal burnt in a closed retort. If you put a meter on, it may not measure correctly. It is really a technical question. I submit that Mr. Alexander is correct. If you heat a certain number of tons of coal in a closed retort, you must get a certain quantity of gas. You know what the analysis of the coal is. You know the analysis of the gas. By the meter you won't be able to measure the gas any more accurately. It is certain.

President.—When it comes to distribution.

Mr. Peterson.—There you are perfectly right. We are installing now measuring devices in each department. It is a quesion of money.

President.—I am just making this general remark that it is a general defect in the system of accounting.

Dr. Matthai.—You make a statement that there is no system of measuring gas in producers.

Mr. Peterson.—No one measures producer gas. We know the quantity of coal put in, we know the analysis of the coal and we know what we must get.

Dr. Matthai.—It is only where the steam or gas is distributed over a number of things that the question of measurement would be important.

Mr. Alexander.—We don't do it. A certain number of producers serve certain departments and they are charged to those departments. In no case do producers of the one department furnish gas to another department.

President.—Except in the open hearth.

Mr. Alexander.—Except that they are entirely separate.

President.—You have got the same producer for the bar mill and the rail mill.

Mr. Alexander.—The bar mill is separate. The rail mill is coupled with the blooming mill soaking pits.

President.—It is not so shown here.

Mr. Alexander.—The bar mill is separate. The open hearth has its own producers, the mill has its own producers and coal is weighed into them.

President.—I have no more general observations to make as regards these. What I told you just now was it was time for your own satisfaction you had these measuring devices.

Mr. Alexander.—That is one of the things that I have been complaining about for the last seven years that we have not got measuring devices. We are getting them gradually.

President.—We may have to complain of it a little too. It is very little good our going into the works costs without these details.

Mr. Alexander.—It would not amount to very much in the ultimate cost. One department would not be penalised and the other department given credit for much too much.

President.—I have not had time to examine all the exhibits. I just want to ask one or two questions about a few of these. Take your exhibit A, *i.e.*, steam.

Exhibit A.

Mr. Mathias.—Have you a measuring device for steam?

Mr. Alexander.—No.

President.—In this department you have got three different plants, one is general steam and then you have got the duplex plant boilers where you are using oil.

Mr. Alexander.—Tar and oil.

President.—And you also have got a new blooming mill boiler. If you want to compare the efficiency of these three different sets of boilers, you have got no means just at present excepting the quantity of coal.

Mr. Alexander.—No other means.

President.—Then as regards the other departments there again the question of allocation comes in. Therefore you have the same difficulty that you cannot compare the efficiency of one side of the plant with that of another for this very reason.

Mr. Alexander.—Yes.

President.—I took first the general steam and then I took this new blooming mill boiler and compared them. I came roughly to this result. If you take the total quantity of coal used in each case, the results are the same. That should not be, because this is a new plant and the other is an old one.

Mr. Alexander.—The results are the same on what basis steam generated or what.

President.—Costs.

Mr. Peterson.—Per what?

President.—Per ton of coal burnt. It works out to the same thing, whereas it should be different. Secondly, you don't know how much steam you are getting out of the old plant and how much you are getting out of this new plant. How are we to compare?

Mr. Alexander.—We make tests.

President.—I think that this really ought to be rectified as soon as possible. It is essential that you should know yourself how your plant is doing.

Mr. Alexander.—Yes.

President.—I am sure you would agree with me that at present you have got to work in the dark as to the actual efficiency of the plant.

Dr. Matthai.—In the last resort it depends on somebody's instinct.

Mr. Alexander.—I don't know how you compared.

President.—The comparison was simply this. The cost above coal works out more or less in the same proportion in the two plants. That is not as it should be.

Mr. Alexander.—You have taken the cost above, but you have not taken into account the product.

President.—What is your product?

Mr. Alexander.—Steam.

President.—We have not got it. That is what I say. I will explain to you what I tried to do. Of course the real test would be the quantity of steam generated. We have not got that.

Mr. Alexander.—No.

President.—What other tests have we?

Mr. Alexander.—Are you speaking of the blast furnace?

President.—I take it that the gas from blast furnaces doesn't cost very much after that stage.

Mr. Alexander.—No.

President.—So I took Rs. 24,00,000 against Rs. 8,60,000 which is the total cost above coal. The proportion of Rs. 24 lakhs to Rs. 8 lakhs is more or less the same as the proportion of Rs. 55,000 to the other, *viz.*, roughly Rs. 20,000.

Mr. Alexander.—But you have not taken into account the blast furnace gas in the former case.

President.—I am just trying to point out that the only thing that you can compare is the cost above coal, and it is incomplete for comparison. As for the rest we can't make any comparison, because we don't know how much you have generated. It is a very big item. It comes to about Rs. 42 lakhs.

Mr. Alexander.—The real test of efficiency of any boiler plant is the amount of water evaporated with so much fuel.

President.—You don't do that.

Mr. Alexander.—No. Excepting on tests.

President.—It is not unlikely that for that reason you are using much more coal in these old boilers.

Mr. Alexander.—We know that.

President.—Having known that, it is time that you had it rectified.

Mr. Alexander.—I have put down Rs. 10 lakhs for fuel economy.

President.—I take it that most of these boilers are old boilers.

Mr. Alexander.—It depends on what you call old ones. We had originally 16 boilers in the old plant.

President.—What were these boilers?

Mr. Alexander.—They were Babcock and Wilcox boilers.

President.—Are they all of the same type?

Mr. Alexander.—Yes. In 1916-17 we added 4 more of the same type; 1919-20 we added 5 more, that is 25 boilers of practically the same type as the original boilers.

President.—There is a good deal of difference between the old ones and the recent ones. I have seen the old ones and the very recent ones. In one case they brought down the consumption of coal in the proportion of 4 to 3 in the boilers. You don't know because you don't know what steam you are producing.

Mr. Alexander.—We know the amount of water evaporated. That is the basis.

Mr. Peterson.—We do make these tests on these boilers. We have these figures, but they are not on the cost sheets. About a year ago we made a special investigation.

President.—After all you don't know the quantity of steam generated.

Mr. Peterson.—We have it. We have not got them in cost sheets. It is tested daily.

President.—If you have the total quantity of steam generated, then it would be very easy for you to allocate. The allocation is conjectural now?

Mr. Alexander.—The allocation will always be conjectural.

President.—It again comes to the same question. We are arguing in a circle.

Mr. Alexander.—It costs so much to run a boiler plant—

President.—Let me tell you that a boiler 16 years old is considered very old nowadays and 16 of them are apparently 16 years old.

Mr. Alexander.—They are quite efficient.

President.—I have no doubt.

Mr. Alexander.—You made the statement that if we had the amount of water evaporated, it would be much easier to allocate.

President.—I didn't say it would be easier to allocate if you knew the amount of water evaporated, but I said that if you could measure the steam generated, it would be easier to allocate.

Mr. Alexander.—If you measure the steam generated, the allocation would not be any the easier, unless you measure the steam in each and every department.

President.—I have seen it done.

Mr. Alexander.—So have I.

President.—It can be done.

Mr. Alexander.—It is going to take a long while to do it—but we expect to do it.

President.—That is not the point. You have been 16 years over the plant.

Mr. Peterson.—Mr. Alexander has not been in the plant for 16 years.

President.—I am quite sure Mr. Alexander is doing his best. I am just trying to point this out to you. It is not the fault of the General Manager, I know. I don't blame him for that.

Mr. Alexander.—I may tell you in this connection that about a fortnight ago I ordered the first steam flow meters ever to be installed in the plant.

President.—My contention is that steam is a very large item and it is worth while economising that.

Mr. Alexander.—The first thing is to generate the steam efficiently and the second thing is to use it economically.

President.—Absolutely.

Mr. Alexander.—These are the two big points. We know what our various steam units should use.

President.—How do you know?

Mr. Alexander.—We know theoretically.

President.—I don't believe in theories on points like these.

Mr. Alexander.—It is a question of engineering and calculation. We know what every steam consuming unit in our plant should use.

President.—I am not an expert, but I should find it very difficult to believe that a theoretical test had been established in a particular instance, because

there are so many factors in the acutal working of it, which might have been lost sight of in theory.

Mr. Alexander.—Take our generators. They are guaranteed for certain steam consumption, so many lbs. of steam per K. W. generated. We know how much steam we generate in the boilers, because we know how much water we have evaporated. If we evaporate more water than is necessary to run these units, we know that we have made and used too much steam. The first thing to do is to generate the steam, that we are using, economically, to get the boilers to a higher state of efficiency and then simultaneously with that we must find out where the steam leakages are and correct them. That is exactly what we are doing.

President.—My suggestion to you is this. Even if you can't have meters for the whole plant, it is worth while to have it on one of your most recent boilers and on one of the old ones.

Mr. Alexander.—We don't need them on the boilers.

President.—Have them wherever it is necessary.

Mr. Alexander.—We need them on the machines.

President.—That is as regards the consumption of steam, but as regards the efficiency of the boiler itself, I think if you have these meters on one unit of each class, then you know whether the time for scrapping had come or not.

Mr. Alexander.—You are under a wrong impression. You need meters to measure the consumption and not the generation.

President.—How do you know how much is generated?

Mr. Alexander.—Because we know the lbs. of water that we have evaporated. It is measured before going into the boiler.

President.—That being so, you don't know apparently whether you are not using too much steam.

Mr. Alexander.—That is right. That is where we want the steam meters, not on the boilers, but on the consumers.

President.—Have it that way. It comes to the same thing. There are two points:—

(1) whether you are getting good results from the boilers themselves, and

(2) whether having got them, you are using steam economically.

Mr. Alexander.—First of all we measure the water. We know that a lb. of coal should turn so much water into steam. If it doesn't do that, the boiler is inefficient.

Dr. Matthai.—What you are saying holds good both with regard to gas and with regard to steam, that is to say, as regards the actual production you don't need any device for measurement, because you know the materials that you use in the production and that gives you the output. The only question therefore is the way in which steam is distributed among the various units and the other thing is you must be careful about the leakages. Is that your position?

Mr. Alexander.—That is right.

Mr. Mathias.—With regard to the measuring device how do you determine how much steam is used in one particular plant?

Mr. Alexander.—Are you speaking from the boiler end or from the consuming end? You see there is a difference there. We know how much steam we are using on the whole, because we measure the water that is evaporated

Mr. Mathias.—Not having the meter, how do you ascertain the cost of steam?

Mr. Alexander.—It is allocated by the Engineering Department.

Mr. Mathias.—Let us take one particular case; for instance, in the old rail mill, your steam charges are Rs. 3,21,000 which work out to 7·11 per ton whereas in the new rail mill your steam charges are Rs. 15,141 which work out to ·16 per ton. Am I correct?

Mr. Alexander.—Yes.

Mr. Mathias.—How do you come to figures so wide apart?

Mr. Alexander.—The old rail mill is driven by a steam engine whereas the new rail mill is driven by electricity.

Dr. Matthai.—Can you explain this to me? Take the old blooming mill. I find that the steam cost comes to Rs. 3,64,000 odd. Take the old rail mill. I find that the steam is Rs. 3,21,000 odd. Both of them are run mainly by steam. The output of the old blooming mill was 87,000 and the output of the old rail mill was 45,000. How do you account for the fact that the consumption of steam is the same in both cases?

Mr. Alexander.—The products are entirely different. The blooming mill only rolls blooms whereas the rail mill produces a finished article much smaller in size.

Mr. Peterson.—One produces a much higher priced article than the other.

President.—I cannot go into the question of allocation of steam to the various departments because these figures are not accurate. But I think that they are accurate so far as these three items are concerned, *viz.*, old blooming mill—9·1 per cent., old rail mill—8·1 per cent. and old bar mill—5 per cent. That makes a total of 22·1. You have got electric light and power which takes away 45 per cent. If you add also 25 per cent. for blast furnaces, the total comes to 92 and the rest I take it goes to the other departments.

Mr. Alexander.—That is right.

Dr. Matthai.—You have some kind of working formula for these allocations, haven't you?

Mr. Alexander.—Yes. Take this as a typical case. Take the question of steam here. We know what the consumption is per unit of time and we know how many hours a day the mill operates and the total consumption is then calculated.

Dr. Matthai.—Your contention is that we cannot pronounce any opinion on the rightness or wrongness of your figures apart from the formula. Take, for example, steam. Steam in one account is so much and steam in another account is so much. I want to know whether this expenditure has been rightly incurred in both cases. Your contention would be that I cannot make up my mind unless I am in a position to judge the accuracy of the formula on which it is done.

Mr. Alexander.—We could not prove that this formula is right.

Dr. Matthai.—This formula you have worked out on the strength of your own experience in your works.

Mr. Alexander.—This is how we do. We were operating working three shifts a day on the old mill and there was a certain allocation on that basis. Now we operate the mill for two-thirds of that time. We have to reallocate whenever there is a change in the number of operating hours.

President.—But steam has got a way of escaping which you cannot always detect.

Mr. Peterson.—That is one of our troubles.

Dr. Matthai.—You can smell gas when it is escaping but you cannot smell steam when it escapes.

President.—You may know how much you are using. You do not know how much you are wasting.

Mr. Alexander.—We know how much we *should* use. If we make more steam—which we can measure—we know that we are using too much.

President.—I find it rather difficult to follow.

Mr. Alexander.—I am not contending that our steam plant is efficient in any shape or form. It will take a long time to make it efficient.

President.—May I take it that your allocation is comparable to the system that is adopted in other countries?

Mr. Alexander.—Yes.

Dr. Matthai.—With regard to steam?

Mr. Alexander.—Yes.

President.—You have 25 boilers in the old plant.

Mr. Alexander.—Yes, and we have built 20 new ones.

President.—Are you working 45 boilers now?

Mr. Alexander.—Yes, in the old plant.

President.—How many boilers does the new blooming mill contain?

Mr. Alexander.—Only one.

President.—If one boiler uses more coal than another, would you be able to find it out?

Mr. Alexander.—Yes, we do.

President.—How?

Mr. Alexander.—Take the boiler in the new blooming mill.

President.—There you have got only one boiler. Where you have a battery of 45 boilers, if one boiler uses 5 times more coal, would you be able to find it out?

Mr. Alexander.—It would not be using 5 times more without our knowing it. It would not use 25 per cent. more without our knowing it.

President.—Supposing it gradually increases—this year 100 tons, next year 105 and the year after 110 tons—it can go up to 125. Until it has reached the maximum amount of wastage, you would not be able to detect it.

Mr. Alexander.—If we have 20 boilers we know that those 20 boilers should produce so much steam and we periodically make tests of individual boilers to see what the efficiency is. You could not test the efficiency in any other way unless you had a meter on each and every boiler.

President.—I may be quite wrong, but my recollection is that the new boiler of the same type is probably 15 to 20 per cent. better.

Mr. Alexander.—There is practically no change in our new Babcock and Wilcox boilers.

President.—There are in the new type certain arrangements which will reduce the quantity of coal used.

Mr. Alexander.—No.

President.—In the paper industry we certainly came across a case where they brought down the coal consumption from four to five tons to about 3½ tons.

Mr. Alexander.—About two years ago we put down 8 new boilers and we now get 50 per cent. more efficiency than we did a year ago. We are continually making changes and checking to get the coal consumption down.

President.—That is what I mean. They are more economical. What it comes to is this that you should scrap those old mills. Then, there will be a considerable reduction in your steam costs.

Mr. Alexander.—If we shut down the old mills, we have to roll the steel elsewhere which takes electricity which in turn takes steam, so that all the steam will not be saved.

President.—How much would be saved?

Mr. Alexander.—Possibly 50 per cent.

President.—In calculating the cost above coal in Exhibit A where you have three different plants, I take it that you make the allocation of the cost above coal in the same proportions, don't you?

Mr. Alexander.—Yes, in the same proportions whether it is coal, gas, or water.

President.—It is a recurring evil.

Exhibit B.

A quarter of the water is used in blast furnaces, is it not?

Mr. Alexander.—Yes.

President.—What is it for?

Mr. Alexander.—For water cooling. The tuyeres, coolers, cooling plates, etc., round the furnaces have to be kept cool continuously.

President.—Does the water circulate or what?

Mr. Alexander.—If they are not kept full of water, they burn out.

President.—I simply want to know generally in what form water is used in the blast furnaces.

Mr. Alexander.—It is used for water cooling. The same thing applies in the case of the open hearth. In the case of Wilputte and Koppers ovens, it is used in quenching the coke and keeping the tar extractors cool. Generally speaking about 80 per cent. of water used in these departments is for cooling purposes. The balance of the water used is mainly in the condensers of the blowers and generators.

Exhibit C.

President.—As regards electric light and power, you don't show in this statement any credit for the current that you sell. Where is this shown?

Mr. Alexander.—It is supposed to be shown in the allocation. They give credit for the electric light and power we sell to the subsidiaries and the outside consumers and the balance is allocated to the works.

President.—Do you mean to say that this total of Rs. 22,93,578 is after taking credit?

Mr. Alexander.—It might be after taking credit but they have not shown it. In making these yearly statements they take the power sold into account before distributing.

President.—It can hardly be so. It gives all the items of expenditure. Your largest item is steam.

Mr. Alexander.—I don't know whether the sum total of the distribution adds up to this Rs. 22,93,578. We should deduct the outside sales.

President.—The full charge for steam is shown here. Credit has not been taken apparently.

Mr. Alexander.—It is a question of looking up and seeing whether what they allocate to all the departments will add up to Rs. 22,93,578.

President.—Let us go through this again. This 6·3 against converters in your allocation of electric light and power is apparently wrong. Surely the converters would not consume so much electricity?

Mr. Alexander.—Converter blowers are driven by electricity the same as the blast furnace blowers are driven by steam. There are two 28,000 c. ft. blowers motors and they are big consumers of electricity.

President.—Then it must be 6 per cent. That accounts for it.

Exhibit D.

Now we come to Exhibit D. You have got altogether, I think, five producers,

Open hearth, blooming mill and rail mill . . .	1
Old bar mill	1
Duplex plant	1
New blooming mill	1
New merchant mill	1

Mr. Alexander.—There is none at the merchant mill at present. That is coke oven gas entirely.

President.—That makes 4. Is it economical to have separate producers for each department?

Mr. Alexander.—There is a limit how far you can convey producer gas. Suppose there are mills two miles apart, you cannot use the same producer for both.

President.—Take the new plant. Would it be necessary for you to have separate producers?

Mr. Alexander.—Yes. The distance between the departments is too great. We would have to have enormous size pipes and would have to work the producers at a very high pressure, in order to force the gas to that distance. It is impractical.

President.—Where the distance is of some consequence it conduces to economy, to have separate gas producers, is that so?

Mr. Alexander.—Yes. If you had a central gas producer plant and had to distribute the gas over a large area where the mills are far apart it becomes impractical.

President.—I was trying to compare this old and the new plant in terms of coal first. In the old plant you have one producer for the open hearth, blooming mill and the rail mill.

Mr. Alexander.—That is right.

President.—That has to be compared with the duplex.

Mr. Alexander.—And the new blooming mill.

President.—As regards the rail mill, you use coke oven gas in the new plant?

Mr. Alexander.—That is right.

President.—Then we have got to take the gas that you get from the producer in the duplex itself and the gas you get for the blooming mill?

Mr. Alexander.—You want to compare the gas producers only not mixed up with coke oven gas?

President.—The quantity of fuel that you use in these three mills. You have got in the old plant the open hearth, the blooming mill and the rail mill.

Mr. Alexander.—There is no producer gas in the rail mill.

President.—You are using coke oven gas there?

Mr. Alexander.—Yes.

President.—I am taking that. In the open hearth you use 1,112 lbs. of coal and in the old blooming mill 428 lbs.

Mr. Alexander.—Yes.

President.—And in the old rail mill 435 lbs. That makes a total of 1,975 lbs. against 495 lbs. in the duplex *plus* some miscellaneous fuel which comes to ·18. I am converting it into lbs. of coal which gives me 35 lbs. In the blooming mill you use 2,282 tons of coal. It is given in the cost sheets of the new blooming mill ·09 in the producer gas column and ·36 coke oven gas.

Mr. Alexander.—2,282 tons of coal for the producer gas. ·09—that is the cost of producer gas per ton of steel.

President.—The gas producer is shown in the merchant mill (Exhibit D). It should be in the new blooming mill.

Mr. Alexander.—2,863 tons of coal. That works out to 20 lbs.

President.—If you convert ·09 into pounds of coal it comes to about 20 lbs. Now take the producer in the new blooming mills.

Mr. Alexander.—Leave this particular producer out of account as it was not operating all the 12 months.

President.—You have allocated it for the whole year.

Mr. Alexander.—It was not operating for the whole year.

President.—In the old plant you have got these three together. That is why I want to show it here.

Mr. Alexander.—That won't give you a fair comparison because you are comparing things under entirely different conditions. I don't see what point there is in taking the consumption of coal per ton in this way.

President.—I want to see the saving you are making on coal.

Mr. Peterson.—You want to compare the new producers with the old type of producers?

President.—Yes, in terms of coal.

Mr. Alexander.—How many pounds of coal it takes from pig iron right down to steel, that it is what you want?

President.—Yes.

Mr. Alexander.—You cannot fairly compare that on account of the duplex. The duplex consumes 495 lbs. of coal per ton of ingots whereas in the open hearth it is 1,112. We are operating the duplex on an entirely new process.

President.—There is no converter there, that I understand. I am simply comparing them as the position stands.

Mr. Alexander.—What you want is to compare the old plant with the new plant from the coal required to make a ton of ingots up to a ton of rail. If you take rails then there is difficulty of proper allocation of the coke oven gas.

President.—I am taking the position as it stands. I cannot do more than that on your own figures.

Mr. Alexander.—It will show many time in favour of the new side.

President.—·09 and ·36 works out to 20 lbs. and 60 lbs., respectively. I am taking the figures from your cost sheets. The Wilputte coke oven gas is taken at ·23 which comes to 30 lbs.

Mr. Alexander.—You are putting it in the same ratio.

President.—Yes.

Mr. Alexander.—Re. ·09 you have taken to be equal to 80 lbs.

President.—No. Re. ·09 is equal to 20 lbs. Re. ·36 is equal to 80 lbs. You must take four times as much. I have taken Re. ·23 for the Wilputte coke ovens which works out to 30 lbs.

Mr. Alexander.—Not in the same ratio.

President.—I have taken 20 lbs., 30 lbs. and 60 lbs. Now it would be 20 lbs., 30 lbs. and 40 lbs.

Mr. Alexander.—How did you get your 40 lbs.?

President.—I worked it out in the same ratio.

Mr. Alexander.—But you are rolling a different product. It is the same thing which I explained to Dr. Matthai about steam consumption on the old blooming mill as against the old rail mill. It depends on the product that you roll.

President.—That is true. In the rail mill you are still rolling about a good percentage of rails.

Mr. Alexander.—It takes much less gas.

President.—I have already told you earlier that it cannot be very accurate, but it would be reasonably accurate.

Mr. Alexander.—No, it would not be reasonably accurate, because we are dealing with two different products. Look at the difference in tonnage, 30,000 tons against 10,000 tons.

President.—That may be an explanation, but that does not alter the situation. It is an explanation no doubt as to why the figure is high, but it does not make the figure any the lower.

Mr. Alexander.—You cannot compare on that basis.

Mr. Peterson.—Would it not be easier to take the amount of money spent?

President.—I want it in terms of coal. It is not true in the sense that the open hearth must use more coal.

Mr. Alexander.—Yes.

President.—But it uses 500 to 600 lbs. more.

Mr. Alexander.—Even if you put the open hearth on the same basis as the duplex plant, that will certainly leave 1,375 lbs. as compared with 600 lbs. which still is not true.

President.—In what way?

Mr. Alexander.—Because it is too low on the new side on account of the way in which you calculated.

President.—I have calculated on the basis of the figures you have given. I have not invented them. This Re. ·23 as regards the rail mill is not correct. This will be the Wilputte coke ovens gas. The rest are actual figures.

Mr. Alexander.—You are comparing the coal consumption on a tonnage basis on two different mills.

President.—You have put it on the tonnage basis. As regards Re. ·23 if you take the fuel cost of your coke, it would not come to more than that.

So far as gas is concerned, they are actual figures. If Re. ·09 is correct, then Re. ·36 is a mere matter of calculation. As regards the Wilputte coke ovens, it is only As. 4 worth of coal.

Mr. Alexander.—You are assuming that for Re. ·36 you could roll the same amount of steel on the new blooming mill as for Re. ·23 on the new rail mill.

President.—I am not assuming anything. That is what the mill actually does. If your mill doesn't do that, say that and I will drop it.

Mr. Alexander.—According to these figures, yes.

President.—What other figures have I?

Mr. Alexander.—You are transposing the figures from one mill to another which I contend is not correct.

President.—I am not looking for any explanation just now.

Mr. Peterson.—I think the figures are correct, but Mr. Alexander thinks that this method of comparison will not be useful.

President.—It may not be useful, but certainly it is borne out by the figures. I don't say that there is no explanation for it. I am prepared to accept any explanation that Mr. Alexander may like to give. Obviously the two processes are combined in the open hearth which uses 500 or 600 lbs. of coal more and then the rest goes into the old blooming mill and the old rail mill. As you have made the necessary alterations in the open hearth you would save much.

Mr. Peterson.—The cost of heating would go down.

Mr. Alexander.—I agree with you as regards the cost per ton.

President.—There is something the matter with the allocation.

Mr. Peterson.—That amounts to an admission that Re. ·23 is not correct.

President.—I have not put the figure, have I?

Mr. Peterson.—No.

President.—Then you have got this bar mill gas producer which is quite separate in the old plant. That consumes 516 lbs. of coal per ton, but as regards the new merchant mill, what are you using?

Mr. Alexander.—Coke oven gas part of the year and part of the year producer gas.

President.—No comparison can be made just yet. Where do you get the producer gas?

Mr. Alexander.—From a producer which we subsequently moved from the merchant mill to the new blooming mill.

President.—You had one for the new merchant mill.

Mr. Alexander.—Yes.

President.—Supposing we compare for the time being this old producer in the open hearth with that in the duplex plant, it seems that the producer in the open hearth is a little bit wasteful.

Mr. Alexander.—Yes.

President.—In the open hearth producer the total cost is Rs. 13·32. The cost of coal is Rs. 10·14. The cost above coal is Rs. 3·18. In the case of the duplex plant producer the total cost is Rs. 11·90. The cost of coal is Rs. 10·14, the cost above coal being Rs. 1·76. So there is a difference of Rs. 1·42 in the cost above coal. Why is there so much difference in the cost above coal?

Mr. Alexander.—Because it is a more modern producer, and it is operated with fewer people.

President.—This is the gas producer I take it that you intend to change as soon as you can.

Mr. Alexander.—Yes.

President.—In the case of the new blooming mill gas producer, the cost above coal comes to Rs. 4·35.

Mr. Alexander.—Because there is only one gas producer. We have the same screw for one as for three.

President.—Will you have always one producer there?

Mr. Alexander.—We are going to install three more. They are on the way. We are going to take the coke oven gas off from the new blooming mill.

President.—This new blooming mill producer is even more expensive than the old bar mill producer where the cost above is Rs. 3·25.

Mr. Alexander.—Because of three producers against one.

President.—In the old bar mill, there are three producers.

Mr. Alexander.—Yes.

President.—There would be a substantial economy when the various changes which you propose are made.

Mr. Alexander.—That is the reason why we are advocating them.

Mr. Peterson.—There will be great economy in the consumption of coal in the open hearth.

President.—When do you expect to carry out these changes?

Mr. Peterson.—By 1928-29 we will have the open hearth equipped with new producers.

President.—That may bring down the cost by a couple of rupees or more.

Mr. Peterson.—We have estimated that these producers should save their cost in two years.

President.—The saving will be Rs. 2 or Rs. 3 per ton.

Mr. Alexander.—I don't have my figures here. It costs about Rs. 6 lakhs and these producers would give us a saving of Rs. 6 lakhs in two years or 700 operating days. In two years we make 440,000 tons. This will give us a saving of Re. 1-4-0 to Re. 1-8-0 per ton.

President.—As regards allocation of gas producers, in the open hearth it has gone up from 78 per cent. in 1921-22 to 81 per cent. in 1925-26 because it is producing more.

Mr. Alexander.—Yes, and the old blooming mill and old rail mill have curtailed production and therefore the open hearth has got a bigger proportion. We are using less gas on the old blooming mill and old rail mill because these mills are working part time and therefore they are charged with a lower percentage of the total gas generated.

President.—That is quite true. The old blooming mill has gone down from 14 per cent. in 1921-22 to 12·5 per cent. in 1925-26 whereas the pro-

duction has come down to about a half. Should it not be less than that on that principle?

Mr. Alexander.—We have got to keep the furnaces hot 24 hours to roll 8 or 16 hours.

President.—You are having it both ways. In the one case, if the output has increased, you increase the allocation proportionately. In the other case, if the output has gone down, you only decrease the allocation very slightly.

Mr. Alexander.—The amount of gas used when the mill is not working is only 50 per cent. of what it is when it is working. We work the mill for 8 hours using the maximum amount of gas, and for the other 16 hours we keep the furnaces warm using 50 per cent. of gas.

President.—Does the same thing apply to the old rail mill?

Mr. Alexander.—Yes. We cannot allow the furnaces to go out and heat them up just before starting to roll.

President.—There must be some wastage of gas somewhere.

Mr. Alexander.—There is. That is why it is uneconomical to work part time.

President.—It is not because more gas is required but because you have got 100 per cent. gas and you have got to use it somehow or other whether you can use it economically or not.

Mr. Alexander.—The same thing applies to the plate mill. If we work one or two shifts, we have to keep the furnaces warm for the rest of the time, but if we work three shifts, gas consumption per ton will go down.

President.—How much do you think is absolutely wasted because you have to keep the furnaces warm?

Mr. Alexander.—It is all used and nothing wasted.

President.—All the gas is not actually used, is it?

Mr. Alexander.—Yes, it is used in keeping the furnaces warm.

President.—It is not used in making steel. It is not used up. What is the wastage in that?

Mr. Alexander.—If we could shut the gas off when we shut down the mill, and turn the gas on when we start the mill, then, we would not use more than 50 per cent. of the gas that we are now using.

President.—That is for the whole plant including the open hearth?

Mr. Alexander.—Only in the case of mills working part time, but that is physically impossible.

President.—Here again we are coming back to the same question. You do not know from the point of view of output whether your producers are efficient.

Mr. Alexander.—We know how much coal is gasified.

President.—You do not know how much gas you are getting.

Mr. Alexander.—We know how much coal we are gasifying and we know how much gas we get. It is the same thing as in the case of steam. We know how much steam is generated when we measure the water. In the case of gas producers, we know how much coal we put in and how much gas we generate.

President.—You may be able to understand it. I confess I don't, because there is nothing really to go upon. I cannot go into the other exhibits now. What is exactly meant by " yard switching "?

Mr. Alexander.—Inter-departmental transportation. It is allocated on the basis of the number of shunts made for each department.

President.—Why do you call it " yard switching "?

Mr. Alexander.—It is moving of railway wagons from one department to another.

Mr. Mathias.—Has it anything to do with the transportation of material from one department to another?

Mr. Alexander.—It has. One-third of the transportation is on account of the blast furnaces.

President.—Why does it require so much?

Mr. Alexander.—To handle raw materials, to move pig iron and to remove the slag.

Mr. Peterson.—It is the transportation of hot metal.

Mr. Mathias.—Is the allocation based on the number of shunts made?

Mr. Alexander.—Yes.

President.—Do you count the number of shunts made for each and every department?

Mr. Alexander.—We do.

President.—There is no allocation here. It is only actuals.

Mr. Alexander.—Yes. Several are actuals:—

Yard switching.
Stable and auto expenses.
Laboratory expenses.
Shop expenses.

These are the ones you are not dealing with.

Mr. Mathias.—On what basis do you allocate stable and auto expenses?

Mr. Alexander.—Charged according to service rendered.

Exhibit G.

President.—As regards Exhibit G, you have got two Exhibits G-1 and G-2. I take it that Exhibit G-1 is actual office expenses.

Mr. Alexander.—General office charges.

President.—Exhibit G-2 contains miscellaneous general charges.

Mr. Alexander.—G-1 comes from the main office. London office is included in that.

President.—Does that come from the Bombay office?

Mr. Alexander.—Yes.

President.—Where do you put your town expenditure in these statements?

Mr. Alexander.—That is not in the cost sheets at all.

President.—Where does it come?

Mr. Peterson.—We have a separate budget for that. The town is under the administration of a semi-municipal body. They have a budget of their own and keep separate accounts.

President.—In our calculation we took your works costs and added your Bombay charges. Where did this go in?

Mr. Peterson.—I think that you showed it separately.

President.—Last time they were not able to explain where it went in. They told us that it had gone in somewhere.

Mr. Peterson.—Did it not go into overhead?

President.—We took the fixed expenditure in the overhead, but as regards administrative expenses of the town, we were not able to find out where it went.

Mr. Peterson.—It is not in the works costs.

President.—My recollection is that you told me that it had gone in some where. I want to know where it has gone in.

Mr. Peterson.—We could give it you separately if you want it.

Mr. Mathias.—On page 13 of the representation there is a list where you give "Less Town" Rs. 3,00,000. Does this show that it is not included in the works costs?

Mr. Peterson.—It is not included in the works costs.

Dr. Matthai.—Is it appropriated to profit?

Mr. Peterson.—We have not appropriated it. We have to find the money.

President.—Probably it may be self-supporting.

Mr. Peterson.—In 10 years' time it may be; it is not self-supporting at present.

President.—It must be somewhere.

Mr. Peterson.—It is shown in the Company's accounts. It has nothing to do with works costs.

President.—I think it ought to go into your Exhibit G.

Mr. Peterson.—We can bring it in here quite easily if you want us to.

President.—That is the only way to do it. There is no other heading under which it can go in.

Mr. Peterson.—If we put it in Exhibit G, it means re-allocating the whole department.

President.—It would be sufficient if you gave us a statement of what your expenditure was.

Mr. Peterson.—The best thing will be to give you a statement showing the actual expenses last year and the actual credits and the nett result.

President.—That is it. In future you might consider this. It is a general charge.

Mr. Peterson.—Yes.

Dr. Matthai.—What do you do with taxation? Generally taxation would be shown in a statement of this kind, would it not?

Mr. Peterson.—There would be certain amount of taxation. There is a cess on iron ore and coal. There is no other taxation except income-tax.

Dr. Matthai.—Practically your expenditure on the town is in the nature of taxation?

Mr. Peterson.—Part of it.

Dr. Matthai.—Supposing Jamshedpur was a regular municipality, you would be paying cesses to the extent of your town expenditure?

Mr. Peterson.—We have to provide a certain amount for accommodation, dairy firm, supply of milk, etc. Certain of these supplies we have got to keep in our own hands as we cannot organize them in any other way.

President.—You have got two or three items which I don't find anywhere —Town, education and the hospital. As regards the future you ought to show these in Exhibit G-1 because really these are general charges.

Mr. Peterson.—Of course these are general charges against the plant.

President.—As regards this item Conservancy in Exhibit G-2, that is conservancy in the works only?

Mr. Peterson.—Yes.

President.—Education?

Mr. Peterson.—That will go into the Town.

President.—Hospitals?

Mr. Peterson.—In the town. I think Bombay Office expenses and Director's fees should also come in here.

Dr. Matthai.—"Coal to Bungalow," what is that?

Mr. Peterson.—They are allowed coal.

President.—As regards allocation of these you follow the method of allocating according to the works costs?

Mr. Peterson.—Yes.

President.—It may be a right method, but it seems to be rather an unfair method. What is wanted is that it should be in proportion to the service rendered to the different departments. What this means is that a certain value has been added to the unfinished article. You take the difference between the value of the unfinished article and the value that is added and in that proportion I think you ought to allocate that. That would be fair. I was speaking the other day about corrugation. You add very little to the value between the plain galvanized material and the corrugation. Take a simple product like steel sleepers. There is the material Rs. 102—I am not taking scrap into account—and the finished article is Rs. 119. There is 17 rupees added to the value and it ought to bear its charge in proportion to that and not in the proportion of Rs. 119 and something else.

Mr. Peterson.—We allocate as a matter of fact at present on the cost above material, that is the cost of operating the department, and that is the value added to the material. I may say that I am not particularly satisfied that this is the best method of allocating, but I was very particular that we should not make any change in the cost sheets until the Tariff Board's enquiry was finished and therefore left the system exactly the same as at the first enquiry, but we are by no means satisfied that the allocation is perfect. We are making enquiries in London and in America but have not succeeded in getting any better system from any of the cost accountants.

Mr. Mathias.—This is on the cost above material?

Mr. Peterson.—Cost of operating the department practically. I think some of them do it on the labour in each department. I had it done on the market price, I had it done on the profit, I had it done on the labour. I found it made very little difference.

President.—In a case like corrugated iron sheets it is very simple. You take the plain galvanized sheets and then the corrugated. Supposing you got Rs. 180 for the plain you get Rs. 200 for the corrugated.

Mr. Peterson.—Sometimes just the opposite happens.

President.—Supposing it does happen, then you get Rs. 20 less as the value.

Mr. Peterson.—I tried it that way but it does not make very much difference.

President.—In the case of blooms and rails, you cannot do it because there is no market price for blooms.

Mr. Alexander.—We do it in this way: the cost above material in merchant mill is Rs. 10,33,193 and in the plate mill Rs. 6,30,907.

Mr. Peterson.—We have kept it exactly the same for purposes of comparison. If we begin to alter the system, comparison becomes difficult.

Dr. Matthai.—When you calculated with reference to the selling price, what difference did it make on galvanized sheets?

Mr. Peterson.—Not very much.

Mr. Alexander.—That would not be satisfactory. Rails may go up to Rs. 200 a ton and imports may drop correspondingly.

Mr. Peterson.—You cannot sell according to the works costs; you sell according to the market price. But if we keep the same system we can say which department is going forward or going back and why.

Mr. Mathias.—Although it doesn't appear to be so, there is some definite system.

Mr. Alexander.—The cost above metal is the principle on which it is worked.

Mr. Mathias.—You use some discretion?

Mr. Alexander.—If it is working one shift instead of three, there will be some alteration.

Exhibit H.

President.—What is this Exhibit H?

Mr. Alexander.—90 per cent. of the expenditure under this head is trucks, motor cars, etc. We have some trucks to carry materials from the shops to the various departments and then we have automobiles to carry the workmen from the town to the works and miscellaneous motor cars.

Mr. Mathias.—Do you bring your workmen from the town to the works?

Mr. Alexander.—We bring the higher paid or superior staff to the works.

President.—It would be worthwhile having a statement showing what your actual wages are as against the nominal wages. You provide for them houses, hospital, education, etc.

Mr. Peterson.—I think the system of providing houses at too low a rental is certainly unsound. It is not economical, but it is very difficult to alter it.

President.—What I mean to say is that when people talk of labour wages as being low they go by the actual money wages, but these are not the real wages.

Mr. Peterson.—They are not. The difficulty is to make an alteration.

Dr. Matthai.—There would be various items to be taken into account. The whole question of welfare work would come in.

Mr. Peterson.—Yes, the provision of housing accommodation gives us a return of only 2½ to 3 per cent. It is not at all an economic rent.

Dr. Matthai.—Do your employees contribute anything towards the upkeep of the town?

Mr. Peterson.—None at all. They pay nothing but rent.

President.—I just want to get an idea of what actual wages means as opposed to nominal wages.

Mr. Peterson.—What we spend on quarters, housing, etc.

Exhibit I.

President.—It shows the shop expense which is a very big item. Does it mean ordinary repairs?

Mr. Peterson.—Yes, repairs and maintenance.

President.—At present it would include a certain amount of construction.

Mr. Peterson.—That is a different account.

President.—Which one is that?

Mr. Peterson.—That would be in the capital account charged direct. It does not appear here at all.

President.—Is this only repairs and maintenance?

Mr. Alexander.—Yes, for the upkeep of the plant.

Exhibit K.

President.—The next exhibit deals with refractories.

	Rs. lakhs.
Calcining	5·19
Blast furnace	·58
Bessemer converter	3·41
Duplex	3·32

It totals about Rs. 12,00,000.

Mr. Alexander.—That is right.

President.—This part of the plant, I think, is more or less a new departure, is it not?

Mr. Alexander.—In what way?

President.—You didn't do it on such a big scale.

Mr. Alexander.—Converter Rs. 3·41 lakhs, and duplex Rs. 3·32 lakhs—these we never had before.

President.—I understood last time you were not properly equipped with a calcining plant.

Mr. Alexander.—Since then we started the new calcining plant.

President.—To improve the refractories.

Mr. Alexander.—Yes.

President.—What is the idea of calcining?

Mr. Alexander.—We calcine limestone and dolomite. It is better to use calcined limestone and dolomite in the process than raw limestone, and dolomite because we get less impurities.

President.—You didn't do that before.

Mr. Alexander.—No.

President.—During the last enquiry you said that you were not doing it.

Mr. Peterson.—We were not doing it, but it was contemplated.

Mr. Alexander.—Since then it has been put into operation. What is your total?

President.—Rs. 12·50 lakhs.

Mr. Alexander.—How is that divided?

President—

	Rs. lakhs.
Calcining	5·19
Blast furnace	·58
Converters	3·51
Duplex	3·32

Mr. Alexander.—The refractory materials such as bricks, dolomite, etc., would be 80 per cent. of that cost.

President.—I am afraid I don't understand much about it. I take it that it saves heating time and that consequently it saves fuel.

Mr. Alexander.—Yes.

Exhibit L.

President.—What is the function of this skull cracker?

Mr. Alexander.—It is for breaking up scrap into small pieces so that it can be charged into the open hearth and the blast furnaces.

President.—As regards these exhibits, is allocation done in the office?

Mr. Alexander.—In the accounts office.

President.—That may be as regards town works and other things. As regards the technical processes, who does that?

Mr. Alexander.—Give me an instance.

President.—Take the question of allocation of steam. Who does it?

Mr. Alexander.—General Master Mechanic. Whenever a change is made where one department use less steam and another department more steam, he makes out a fresh allocation.

President.—Are there different persons in charge of allocations?

Mr. Alexander.—One for steam, the Chief Electrical Engineer for electricity.

President.—Producer gas?

Mr. Alexander.—No allocation is necessary excepting between the open hearth and mills. That is done by the Superintendent of the open hearth on the basis of the tons of coal gasified in the different producers.

President.—I take it as a matter of principle it comes to this. The man in charge of the department makes the allocation. The General Master Mechanic in charge of the steam plant allocates the steam, the Chief Electrical Engineer electricity, the open hearth Superintendent gas and the General Master Mechanic water. And the office does the allocation of the general works expense.

Mr. Alexander.—Yes.

Dr. Matthai.—Who originally devised the system of cost accounts for you?

Mr. Peterson.—It was done at the start. But we brought a cost Accountant from America in 1920. The system was originally brought from America in 1910 and we had him out again in 1920 to revise it.

President.—There are two points in regard to which I want a little more information. One is as regards your inferior labour. What system have you got of checking the numbers?

Mr. Alexander.—Each monthly paid man has a ticket. The time-keeper punches the ticket when he comes on to duty at, say, six o'clock in the morning at the beginning of the shift————

President.—That is as regards the monthly paid.

Mr. Alexander.—The same is the case with the weekly paid. All have tickets excepting those who are on the general staff, *i.e.*, the superior staff who sign a book.

President.—Can you effectively prevent one man getting five tickets?

Mr. Alexander.—That is up to the time-keeper. Each man has his own ticket. The time-keeper goes round and punches the ticket when he comes on to duty, while he is on duty and when he goes off duty. He gets three punches. Sometimes the men and the time-keepers work together and cheat the Company. We have had instances where men had extra tickets.

Mr. Mathias.—The man who punches the tickets is called checker?

Mr. Alexander.—Time-keeper.

Mr. Mathias.—How much pay does he draw?

Mr. Alexander.—The time-keepers start anywhere from Rs. 30 up and go up to Rs. 60 a month. There might be a few cases of men having extra tickets, but it would not be by hundreds. We have actually found men with two tickets and discovered other irregularities but we are constantly on the look out for this.

Mr. Mathias.—What happends if a man turns up late at the works?

Mr. Alexander.—He does not get his ticket punched. He doesn't get his attendance.

Mr. Mathias.—Does he not get any pay for that day?

Mr. Alexander.—He is allowed a certain number of days absence, and is paid, but that goes against his privilege leave.

President.—Next year you reduce your staff by 10 per cent. and you will find that they will do with the rest.

Mr. Alexander.—We are reducing much more than 10 per cent. We will reduce it by another 10 per cent. this year.

President.—They are not doing any particular work. I have been unable to see what reduction you have made. You take 10 per cent. off and say that they must get the work done. That is the only way to do it. I have done so in many cases.

Mr. Alexander.—So have we. We do it every day.

President.—There is one other point that I want to ask you about—black sheets and tinplates. Are the processes essentially the same?

Mr. Alexander.—Yes.

President.—In respect of tinplates you tin them and in respect of galvanized sheets you zinc them.

Mr. Alexander.—Yes.

President.—More or less the rolling machinery is the same.

Mr. Alexander.—Yes.

President.—The point is that if the Tinplate people are able to train their men to use that machinery, you ought to be able to attain at least the same efficiency, if not more.

Mr. Alexander.—Certainly.

President.—The only difference would be, speaking generally, that the work in the sheet mill would be a little less difficult because it is bigger.

Mr. Alexander.—It is more difficult.

President.—In what sense?

Mr. Alexander.—We have a more varied line of product in the sheet mill and it requires greater skill. The sheet mill workers are the highest paid workers at home. The Tinplate Company roll practically only one size of sheet. The man at the Tinplate Works rolls that day in and day out, whereas in the sheet mill he might have to roll many kinds in the course of a week which requires more skill. He would have to take more care of the roll.

President.—When a thing is small, the machine has to act with greater precision than when it is big.

Mr. Alexander.—There is very little difference in the process, I agree, but it takes a little more skill to become an efficient sheet roller than it does to become an efficient tinplate roller.

President.—Because of the larger variety of products?

Mr. Alexander.—Yes.

President.—What does it mean?

Mr. Alexander.—Thickness and width.

President.—As regards thickness, have you to change your roll?

Mr. Alexander.—The greatest difficulty is in the width. Sheet and tin mill rolls are not cooled. There is no water put on them and they get hot. They have to be handled very carefully. It makes a lot of difference whether we are rolling narrow sheets or wide sheets. Narrow sheets have to be rolled under certain conditions and wide sheets under certain conditions.

President.—Generally speaking, it is more or less the same.

Mr. Alexander.—Yes.

Dr. Matthai.—On the point that you raised in the letter to the Government of India about black sheet I want some information. All the black sheets that you roll are annealed. The distinction between the two items in the Tariff Schedule does not depend upon the question of annealing, because all sheets are annealed.

Mr. Peterson.—Yes.

Dr. Matthai.—The extra work that is done which brings the article under the second item is cold rolling.

Mr. Alexander.—Yes.

Dr. Matthai.—The idea of cold rolling is to smooth the sheet.

Mr. Alexander.—Yes.

Dr. Matthai.—Above that, there is the acid treatment. The Tariff Schedule says that sheets, if annealed, which have either been cold rolled or smoothed, including planished, pickled or cleaned by acid or other method or process are assessed at 10 per cent. What is planishing?

Mr. Alexander.—Cold rolling.

Dr. Matthai.—What is the idea of acid treatment?

Mr. Alexander.—We clean the sheets with acid for galvanizing.

Dr. Matthai.—If you take a ton of black sheets, what difference would it make? Would the difference be about Rs. 10?

Mr. Alexander.—About Rs. 6·11 per ton of black sheets will be the pickling charges.

Dr. Matthai.—So that it would be worth while to get them pickled and imported under a lower duty?

Mr. Peterson.—That is the point we made to the Government of India. They add another simple process and bring in sheets under the lower duty.

Dr. Matthai.—There is one other point. You are not providing for any further blast furnaces.

Mr. Peterson.—We are providing for certain equipment in the blast furnaces which are in the nature of improvements in the process.

Dr. Matthai.—I remember that you told us quite distinctly last year in connection with the question of the tilting furnace that if you had a third tilting furnace and the fifth blast furnace were blown in, there would be no surplus left.

Mr. Peterson.—Yes, I remember that.

Dr. Matthai.—You don't stick to that statement, do you?

Mr. Peterson.—No.

Dr. Matthai.—In the statement given on pages 32 and 33 of your printed representation,* the difference that you estimate in the cost of pig iron in 1933-34 comes to Rs. 3. The same difference occurs in connection with steel also.

Mr. Alexander.—Here we have to consider the decrease in the cost on the blast furnaces.

Dr. Matthai.—Practically all the difference that you estimate against steel could be accounted for by the reduction in the cost of pig iron.

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* See page 28 of Vol. II.

Evidence of Mr. J. C. K. PETERSON, C.I.E., recorded at Shillong on the 22nd June 1926.

President.—This is how I propose to proceed with your examination this morning. First of all I would examine you generally, and then we shall go through your representation and the tables therein, in so far as they have not been covered by the examination that has already taken place, so that we may not miss any of the important points. I will start with a sort of review of the scheme of protection.

Protection—the Original Scheme.

The original idea of the scheme was to give you an average price of Rs. 180 per ton on all steel, except structurals where you get Rs. 175, provided your costs do not exceed during that period Rs. 120 to Rs. 123. Of course you are not contending that you should get Rs. 180 as an all round price for all steel! What you were intended to get is Rs. 57·37 a ton, over your works costs.

Mr. Peterson.—That is correct.

President.—Then you were to get a reasonable return on your capital and depreciation and other charges provided you reached an output of 420,000 tons; that was calculated on that basis. Of course the implication there is that you get *pro rata* on all that you manufacture as an inducement to speed up your production. That was the first scheme that was adopted more or less *in toto* by the Legislature.

Then there was the first enquiry for supplementary protection in 1924. There you got Rs. 20 a ton bounty on $\frac{7}{10}$ths of the ingot production. Is that right?

Mr. Peterson.—Yes.

President.—Then there was the last enquiry in 1925. So far as this Board was concerned, the recommendations were intended to lead to the same result as regards the remainder of the period. The Tariff Board recommended a bounty of Rs. 18 a ton on $\frac{7}{10}$ths of the ingot production which was subsequently reduced to Rs. 12. As regards the subsidiary industries recommendations were made but effect was not given to them except as regards tinplate. In that case the Board recommended Rs. 89 which was reduced to Rs. 85.

Now we have got to see how in fact these various schemes have worked. I think it would be useful to take each individual product. Let us start with the first year, that is 1924-25. In that year up to June there was no protection at all except as regards the bounty on rails. Isn't that so?

Mr. Peterson.—That is correct.

President.—Then during the period between June to September also I think the old scheme still worked?

Mr. Peterson.—Yes.

President.—The alteration came into operation from the 1st October 1924.

Mr. Peterson.—It was not passed until February 1925, but with retrospective effect from 1st October 1924.

Surplus over works costs in 1924-25.

President.—Now let us take the figures given in the above statement. The position is this, that so far as your works cost were concerned at every stage in effect they have been lower than our anticipations.

Mr. Peterson.—Yes, we have reduced them. That was of course partly due to the reduction in the cost of coal. Nobody anticipated that.

President.—We are not going into the causes at present. The result is somewhat as follows: so far as rails are concerned you got, including the two bounties, Rs. 58·69. That is about just what you were expected to get.

Mr. Peterson.—We only got a price of Rs. 124·9 per ton for rails owing to the existence of the contracts. In the open market we would not have got that price.

President.—Your explanation is that the result has been rather due to the existence of the contract and the modification by the Railway Board of the terms.

Mr. Peterson.—The terms have not been modified in this year. This margin of Rs. 58·69 consists mainly of the rail bounty and the ingot bounty.

President.—So far as rails are concerned the big difference only began to appear during last year, so that as far as they are concerned it may be said that the anticipations were fulfilled. As regards heavy structurals you only realized Rs. 49·26, and bar mill products 44·03.

Mr. Peterson.—Yes.

President.—As regards these two, it was rather due to the fact that even before our recommendations were given effect to, there was a variation in price.

Mr. Peterson.—Yes, that was due to the rise in exchange.

President.—Each time you anticipated that you had reached the lowest limit, in practice it so happened that the prices went still lower.

Mr. Peterson.—That is so.

President.—Then as regards plates you got only Rs. 29·84, but I think that is due to the fact that your works costs did not go down as much.

Mr. Peterson.—Yes, but that was due to the lower production.

President.—I don't think the scheme is to blame for that in any sense.

Mr. Peterson.—If our works costs go down we agree that we get a margin but if it does not go down we don't get the original estimated price. But we are making no complaint of that.

President.—As regards black sheet you lost 2·67, that is to say, you did not even realize your works costs. In galvanized sheets you lost 43·16.

Mr. Peterson.—That was the initial loss in starting a department. It will be spread over three or four years in the profit and loss accounts.

President.—As regards tin bars you have got an excess of Rs. 6·85 lakhs.

Mr. Peterson.—In this particular case we have taken the ingot bounty off the tin bar. The result of that would be to raise the margin for all the other products.

President.—But the trouble about this is that in our calculations we took 250,000 as your output for the first year and you very nearly reached that figure.

Mr. Peterson.—It is nearly 248,000 tons.

President.—But it included tin bars which was not intended to give you Rs. 57 per ton. If you had really produced 250,000 tons which was for sale in the ordinary way, you would have been expected to realize a surplus of 57·37 over works costs.

Mr. Peterson.—There would have been a surplus of Rs. 143·42 lakhs if we had realized the margin of 57·37 on 250,000 tons. If you exclude sheet bars altogether it would give a margin of about 65 on 220,000 tons. If you take 220,000 tons as the production with a margin of 57·37 it would be less.

President.—That would come roughly to Rs. 125 lakhs. In addition you get this Rs. 6·85 lakhs on tin bars.

Mr. Peterson.—Are you comparing what we ought to realize or what we have realized?

President.—First what you have realized and then what you ought to have realized. You realized Rs. 107·63 lakhs *plus* Rs. 6·85 lakhs altogether.

Mr. Peterson.—If we are to exclude sheet bars which were not originally excluded, we ought to have realized Rs. 125·24 lakhs *plus* Rs. 6·85 lakhs *plus* the profit on pig iron.

President.—You realized Rs. 114·48 lakhs whereas you ought to have realized Rs. 125·24 lakhs on the production, excluding tin bars, and you ought to have realized on, say, 30,000 tons of tin bars about Rs. 17 lakhs in round figures instead of which you realized Rs. 6·85. For pig iron we allowed for a margin of Rs. 8 lakhs. How much did you realize on that?

Mr. Peterson.—About Rs. 30 lakhs.

President.—According to the scheme you are expected to realise (Rs. 125 lakhs *plus* Rs. 8 lakhs *plus* Rs. 17 lakhs) Rs. 150 lakhs. You actually realized on these figures Rs. 144 lakhs.

Mr. Peterson.—That would not be correct. There must be a mistake. The total works profit in that year amounted to Rs. 124 lakhs. We had to provide for a loss on the Tinplate Company. In addition to that there was a writing down of some stocks. The difference may be due to that.

President.—We are assuming that the scheme has produced for you Rs. 144·48 lakhs against about Rs. 150 lakhs.

Mr. Peterson.—It produced it in a different way from what was expected.

President.—What does it matter?

Mr. Peterson.—What I mean is this that the profits on pig iron were very much larger and the profits on steel were very much less. The actual protection on steel did not produce the effect which was intended.

President.—So far as steel was concerned about (Rs. 125 lakhs *plus* Rs. 17 lakhs). Instead of realizing Rs. 142 lakhs, you realized only Rs. 114·48 lakhs.

Mr. Peterson.—That is about the figure.

President.—You were out by about Rs. 28 to Rs. 30 lakhs.

Mr. Peterson.—That we made up in pig iron to a large extent and a further corollary is we should have been very much more out if we had not had the compensating advantages in the reduction of costs which was chiefly due to the reduction in the cost of coal.

President.—If by any chance your costs had not come down?

Mr. Peterson.—If our costs had remained at the original estimated figure, we should have been nowhere near these figures.

President.—I don't think the price of coal came down below our estimated price.

Mr. Peterson.—For the period.

President.—It didn't. I think you are wrong there. It is due very largely to the extent of the increase in the output.

Mr. Peterson.—That can hardly be, because we didn't attain the full output which we anticipated.

President.—When we reported we took the output of 121,000 tons in 1921-22. That got nearly doubled which must make the difference. As regards coal we took Rs. 8 in 1921-22 and we said that it might go up by a rupee or so. I don't think you have got your coal below that figure.

Mr. Peterson.—Not until this year.

Dr. Matthai.—Supposing you were able to work down to the costs anticipated by the Tariff Board and no further and supposing that prices behaved in the way in which they have actually done and omitting pig iron, how far would you have been out?

Mr. Peterson.—I think we should have closed down long ago. It would mean that we would have made only about Rs. 38 lakhs on steel and the balance would have been the bounty.

President.—In this list you have got to put down your average price, average works cost and margin and so on per ton. In three places you have to do it just at the bottom after galvanised sheets in each case. In this you have calculated the additional bounty on fishplates on the bar mill products.

Mr. Peterson.—We have shown that on the bar mill products. We have rolled all the fishplates on the bar mill.

President.—The tin bar does introduce a very difficult complication in this.

Mr. Peterson.—That is a point which never struck anybody. On page 9 of the 1st Report you find a statement showing the production expected when the new plant is in full operation and sheet bar is included there as a finished product.

President.—The result is this in substance that the figure of Rs. 57 will not give you all your overhead and manufacturers' profit.

Mr. Peterson.—Unless the production of sheet bar is included.

President.—Which can hardly be done.

Mr. Peterson.—The more correct way of doing it will be to divide it into finished and semi-finished products, increasing the margin on the finished and reducing the margin on the semi-finished products.

President.—Take what we call typical steel, *viz.*, rails and bars and then calculate on that basis.

Mr. Peterson.—We can calculate proportionately: but what you omitted to notice was the fact that 35,000 tons of sheet bars was under a definite contract, and that the application of the scheme of protection did not do any good. It was the same in this case of Palmer Railways.

President.—In the case of the Palmer Railways, we took that into account, because we gave bounties. In this case we included tin bar amongst finished products.

Mr. Peterson.—This is a case in which if protection was to be given, it should have been given in the shape of a bounty.

President.—It was not included and I find more or less you are following the same thing throughout your estimates of production.

Mr. Peterson.—We have always followed the system that was adopted by the Board.

President.—It has led rather to very different results. I cannot say how it is to be dealt with at present. I am just pointing out that the result has been different from what was expected.

Mr. Peterson.—Yes.

Dr. Matthai.—Was ever a duty contemplated on sheet bar?

Mr. Peterson.—The question whether it was intended in the Tariff Board's recommendations that the sheet bar should be included under the ordinary bar really subsequently arose when the Tinplate Company actually imported sheet bars. We pointed out to the Customs Authorities who took the case up to the Central Board of Revenue that this came under ordinary bars and should be charged a specific duty, but the Tinplate Company contended that it was not included under bars, but under some other section. The result was that it was imported at 10 per cent.

Dr. Matthai.—That was in accordance with the intentions of the Board.

Mr. Peterson.—We don't know.

President.—It has got no relevancy at all, because our intention does not affect the point. What is enacted there must be taken as the intention of the Legislature and you can't go beyond that. One of the ways to deal with it is this. Take the tin bar out of the finished products and treat it as part of the tinplate manufacture.

Mr. Peterson.—It would be very difficult to differentiate between a sheet bar and a tin bar. As I say 35,000 tons comes under this contract which we

have with the Tinplate Company and the balance of 15,000 tons we sell in the open market unless we come to some new arrangement with the Tinplate Company.

President.—That is also a semi-finished product.

Mr. Peterson.—The term 'semi-finished' is used very loosely. It is a material which is rolled like rails and can be sold anywhere. It is easily saleable.

President.—I don't know whether it is a mistake. Now it requires some readjustment in this enquiry, does it not?

Mr. Peterson.—May I consider that and see if I can make any suggestion.

President.—I should like to hear your suggestion.

Mr. Peterson.—What has actually happened is we have included 35,000 tons of sheet bars in the production. You have not extended protection to it at all, but we have included it in the production for the purpose of reckoning the results of protection and it was always included in the statements put before the Board. I can suggest one way of dealing with it. Take the case of the average cost of the finished steel and the average cost of the tin bar and reduce the quantity of tin bar proportionately, in the same way as we deal with pig iron taking two tons of pig iron to one ton of finished steel. Similarly you can take 1¼ tons of tin bar to be equal to about one ton of finished steel. That will be a very easy way of doing it.

President.—Another way would be this. If we take the ingot production that would take us very much nearer.

Mr. Peterson.—The ingot production would be much the soundest thing to work on.

President.—As regards all products?

Mr. Peterson.—As regards everything.

President.—Instead of taking the average price of finished steel, if you take the average cost of the production of ingots and then added on other charges, I think you might get nearer the correct situation.

Dr. Matthai.—In that case we still retain the proportion of 70 per cent.

Mr. Peterson.—Yes.

President.—We have to consider that.

Mr. Peterson.—The ingot bounty is calculated on that basis. There can be no mistake. It must cover everything.

President.—We need not reduce it to tons. We can work it direct. This is the average price of the steel ingot and this is the price realized from all sources.

Mr. Peterson.—I will try and work out the average price of ingot from the output of all the finished products last year.

President.—Now take the second year which is a complete year, *i.e.*, 1925-26. There also you will make that alteration as to the average.

Mr. Peterson.—Yes.

President.—In this year you have done better.

Mr. Peterson.—The chief feature of this year is a great drop in the cost of rails.

President.—The result of that was that you got a surplus of Rs. 64·70 per ton on rails which is even higher than we anticipated.

Mr. Peterson.—That includes the ingot bounty. It is a higher surplus but not a higher price.

President.—In the case of heavy structurals there was a drop from Rs. 49·26 in 1924-25 to Rs. 44·29 in 1925-26.

Mr. Peterson.—Because heavy structurals were rolled on the old mill.

President.—But you did that before?

Mr. Peterson.—We have been reducing the production on the old mill and therefore the cost has gone up slightly to the extent of Rs. 2 a ton and the average selling price has dropped.

President.—As regards the bar mill products, the margin has been more or less the same.

Mr. Peterson.—There has been a very great drop in the price and there has also been a very great drop in the works costs. That is owing to the coming in of the new merchant mill.

President.—The works costs of the bar mill products came down from Rs. 131·32 in 1924-25 to Rs. 111·14 in 1925-26 and yet you have got more or less the same margin.

Mr. Peterson.—We met the fall in price by a reduction in costs.

President.—Plates show a slight improvement.

Mr. Peterson.—Yes.

President.—In the case of black sheets you got a surplus of Rs. 4·59 against a deficit in the previous year, *i.e.*, 1924-25.

Mr. Peterson.—Yes.

President.—With regard to galvanized sheets, the deficit came down from Rs. 43·16 to Rs. 14·73 in 1925-26.

Mr. Peterson.—Yes.

President.—Then, you have added sleepers in this year.

Mr. Peterson.—That is a very small tonnage.

President.—How do the results work out on the same basis? Let me put it this way. You have included here tin bars, on which you have made Rs. 6·34 lakhs, so that if you add this the total comes to Rs. 137·11 lakhs. Then, there is the profit on pig iron which comes to Rs. 18·82 lakhs. If you add the two it comes to Rs. 155·93 lakhs. What you would have got for 280,000 tons at Rs. 57·37 is about Rs. 160 lakhs, is that right?

Mr. Peterson.—Yes.

President.—On 40,000 tons of tin bar, supposing you were to get Rs. 57·37 per ton, you ought to have got roughly Rs. 23 lakhs.

Mr. Peterson.—Yes.

President.—To that if you add the profit on pig iron, it makes a total of Rs. 191 lakhs (*i.e.*, Rs. 160 lakhs *plus* Rs. 23 lakhs *plus* Rs. 8 lakhs).

Mr. Peterson.—That is correct.

President.—Instead of that, you got only Rs. 155·93 lakhs. Even if you had excluded the tin bar, you ought to have got Rs. 168 lakhs against the actual Rs. 149·59 lakhs.

Mr. Peterson.—That is about correct. In this connection, please see page 76, Annexure A of your last report where you actually give the final surplus including everything.

President.—In that year?

Mr. Peterson.—In the three years as expected under the scheme.

President.—This is more, that is what I am trying to point out. Our last calculations do not appear to be in accordance with these figures. First of all take the year 1925-26. The total is Rs. 130·77 lakhs, that is excluding the tin bar. On the latter you actually got Rs. 6·34 lakhs and on account of pig iron you got Rs. 18·82 lakhs. The total comes to Rs. 155·93 lakhs, whereas you should have got Rs. 160 lakhs *plus* Rs. 8 lakhs *plus* Rs. 6·34 lakhs on tin bars, making a total of Rs. 174·34 lakhs. If you were to get Rs. 57 a ton on tin bars also, it would be Rs. 160 lakhs *plus* Rs. 23 lakhs *plus* Rs. 8 lakhs.

Mr. Peterson.—That is Rs. 191 lakhs, which is almost the figure you have given in your report, where you have taken Rs. 120 lakhs *plus* Rs. 70 lakhs. That is precisely the same figure though arrived at in a different way.

Dr. Matthai.—We might have a similar statement for this year.

President.—What we want to know is, if the scheme had to work on the assumption that the cost had remained as estimated, what difference would that have made because of the drop in the price?

Mr. Peterson.—Do you want it for each product or for the total?

Dr. Matthai.—The total will do.

Mr. Peterson.—Yes.

Dr. Matthai.—As regards the third year, these are estimates I take it. As you know, your estimates are already out for April and May.

Mr. Peterson.—We have yet to pass through the bad climatic months. The costs will go up in June and July. I do not know whether we would get better costs over the whole than we have estimated.

President.—We are going to get your rail costs.

Mr. Peterson.—I doubt very much whether we would improve very much on our rail costs.

President.—You came down to Rs. 83 in April.

Mr. Peterson.—We will go up again. Heavy structurals we won't improve on. As regards the bar mill, we may go down a little. The plate mill we won't improve on, and the sheet mill we will improve on. April and May costs are better than these.

President.—Let us see what you are likely to do this year. As regards rails, the margin has gone up to Rs. 68·43 which is an improvement of Rs. 10 on 1924-25.

Mr. Peterson.—Yes, over the original estimate. That coincides with the drop in the price of Rs. 6.

President.—There is a drop of Rs. 16 a ton in the works costs.

Mr. Peterson.—Yes. There is also a drop in the price of Rs. 6. We certainly would not get that price in the open market. That is due to the existence of the railway contract. We actually sold at Rs. 105 a ton.

Dr. Matthai.—When were the modifications made?

Mr. Peterson.—Before the Tariff Board was appointed. The modifications have been substituted by the rail bounties.

President.—Your margin on rails has increased to Rs. 68·43 in 1926-27.

Mr. Peterson.—Yes.

President.—There is again a drop in the case of heavy structurals from Rs. 44·29 in 1925-26 to Rs. 33·43 in 1926-27.

Mr. Peterson.—But there is an improvement in the costs.

President.—The margin on the bar mill products is Rs. 44·26. It is very consistent in all the three years.

Mr. Peterson.—There is again a drop in the price and there is also a drop in costs.

President.—Whatever economies you have effected in the matter of costs have been carried away by the drop in price.

Dr. Matthai.—If we had not given them protection, their costs would have been lower still!

President.—On plates the margin is about the same this year as in 1925-26.

Mr. Peterson.—A drop in the price and a drop in the costs.

President.—There is a slight drop in the margin on black sheets.

Mr. Peterson.—Yes.

President.—You actually show a surplus of Rs. 23·43 on galvanized sheets for the first time.

Mr. Peterson.—Yes.

President.—I see that your output of tin bars has gone up to 51,000 tons.

Mr. Peterson.—That has now become a different matter, being under fixed contract price.

President.—Let us see what you are likely to do this year. You have got here Rs. 160·57 lakhs excluding tin bars. With the surplus on tin bars, the total will come to Rs. 167·2 lakhs.

Mr. Peterson.—That is right.

President.—What will be the surplus on pig iron?

Mr. Peterson.—I should say we might make Rs. 15 to 20 lakhs out of pig iron this year.

President.—That would make either Rs. 182 or 187 lakhs. At Rs. 57 on a production of 309,000 tons excluding tin bars you ought to get about Rs. 176 lakhs *plus* 6·63, *plus* Rs. 8 lakhs on pig iron, that is a total of Rs. 190·63 lakhs. Then if you allow Rs. 57 a ton on tin bars it comes to Rs. 214 lakhs. If you had got Rs. 214 lakhs then you would have been very near the Board's estimate. What is the net result in all these years of the actual scheme? In the first year it comes to 144·48; in the second year you actually got 155·93, and in the last year 182·2. That gives you a total of Rs. 482·61. From that we really get at what your divisible profits would be. Then we have to deduct the depreciation. That is three years at Rs. 93·4 lakhs; that gives you Rs. 279·75 lakhs. That is to say if you deduct the whole of the depreciation.

Mr. Peterson.—In 1924-25 I don't think the whole thing was working in full. For instance the sheet mill would be working only part time.

President.—Then it would be like this. Probably for this last year, you must take 93·4 and reduce two-thirds in the two former years. That would be, say, Rs. 60 lakhs in round figure for each year. That gives you about Rs. 213 lakhs.

Mr. Peterson.—Yes.

President.—In any case you must pay your debentures as the first charge. That comes to Rs. 48 lakhs roughly in 1925-26. I want to get at the actual debentures.

Mr. Peterson.—The actual issue of debentures is Rs. 6 crores.

President.—It works out at 8 per cent. I think?

Mr. Peterson.—7·92 I think.

President.—That is Rs. 48 lakhs roughly a year. For three years it would be Rs. 144 lakhs. That makes a total of Rs. 357 lakhs. That leaves you about Rs. 125 lakhs to pay your interest on working capital and profits.

Mr. Peterson.—That would be correct.

President.—The working capital takes away another Rs. 75 lakhs. That leaves you Rs. 50 lakhs for the shareholders. You have got, in these three years, a surplus of Rs. 50 lakhs, that is to say it does not even meet the first and second preference shareholders for even one year.

Mr. Peterson.—That is about correct if this year's results are as expected.

President.—If we exclude the debentures, your capital is roughly Rs. 10 crores, is it not?

Mr. Peterson.—Yes.

President.—It earned a dividend of Rs. 50 lakhs in three years on Rs. 10 crores, which is about 1⅔ per cent. per annum.

Mr. Peterson.—Yes.

Fair Selling Price.

President.—I think we had better go on to the question of the fair selling price for the next scheme. We should take the average works cost to determine the fair selling price. We shall confine ourselves to 1925-26 figures as far as possible.

Mr. Peterson.—Which statement are you working on?

President.—This revised statement. To get at your fair selling price, we must take your works cost, then your overhead and then profit. You

have taken in this statement the rail mill and bar mill products as typical of all steel.

Mr. Peterson.—Yes.

President.—That is what we did before.

Mr. Peterson.—You are excluding the sheet mill now from your consideration.

President.—The plate mill and the sheet mill will have to be treated on a separate basis.

Mr. Peterson.—The new merchant mill.

President.—The new rail mill and the new merchant mill. That is where you ought to make adjustments, is that correct?

Mr. Peterson.—Yes.

President.—By way of comparison I think we took the average price of all steel in the 1st enquiry at Rs. 120·41.

Mr. Peterson.—Yes.

President.—The works cost on the new rail mill this year is Rs. 96·02 and on the new bar mill it is Rs. 104·59. The average for the two is Rs. 99·36. That, I think, may reasonably be taken as the average price of all steel subject to adjustments.

Mr. Peterson.—Yes.

President.—If we take the average of all the mills, the average is Rs. 105·24.

Mr. Peterson.—Yes.

President.—We may be justified in taking that new figure of Rs. 99·36. The output on these two mills is nearly two-thirds of your total production.

Mr. Peterson.—No. Three-fourths on 400,000 tons, 100,000 tons on the bar mill, 200,000 tons on the rail mill if we could roll structurals.

President.—We will take it at Rs. 100 for to-day's discussion.

Mr. Peterson.—Yes.

President.—In calculating this in any scheme, we have to make separate provision for different products in the end. If we take the maximum output of rails you expect to reach, and if you get a market for them, it might be convenient to treat them on a separate footing, because they form a considerable portion of your output.

Mr. Peterson.—It is a very easy product to roll. Their costs will always be lower than the cost of any other sections.

President.—If you assume that you would get an easier market, it would pay you to get a little less so long as you were sure of your orders.

Mr. Peterson.—Yes, if we were assured of orders, that is to say, if we got an order for 200,000 tons, we would be very willing to lower the price.

President.—Can we assume that?

Mr. Peterson.—You can assume that. I can't say just exactly how much lower the price would be but it would depend on the increase in quantity.

President.—As regards the works costs we shall take them at Rs. 100, for the purposes of this discussion.

Mr. Peterson.—Yes, excluding sheets and plates.

President.—There is a difference of Rs. 20 between the works costs of 1921-22 and the present works costs. That is what you have saved on an average.

Mr. Peterson.—Yes.

Mr. Mathias.—You take Rs. 100 per ton for all finished steel including sheets.

Mr. Peterson.—According to our statement in the next few years the average price is going to drop still further. It is going to be Rs. 93.

President.—The next item is overhead charges. As regards that first of all we will take depreciation. In order to get the depreciation, we have got to get your block value. In this connection I may point out that so far as the overhead charges and the manufacturers' profit are concerned, we are first of all considering your case and then we shall see how far it may be applicable to a new industry and what modifications are required. We want to get at your block value first of all. Last time we took it at Rs. 15 crores. It was a plant whose capacity was greater in some directions and less in some other directions than the capacity we assumed, *i.e.*, 420,000 tons.

Mr. Peterson.—Yes.

President.—Now you are making proposals which would, so to say, complete the plant. First of all would you agree to our proceeding for the sake of examination on that basis? We will take Rs. 15 crores and to that add Lists A and B.

Mr. Peterson.—Yes.

President.—List A is Rs. 2·07 crores and List B is Rs. 60 lakhs. The two together amount to Rs. 2·67 crores. Then we add Rs. 15 crores to that. That gives us Rs. 17·67 crores. That is for a plant of 560,000 tons.

Mr. Peterson.—Yes. If you include the surplus pig iron it is really 590,000 tons.

President.—We shall not introduce that complication here. We shall take your output at 560,000 tons, because we shall exclude pig iron in both cases. We take our next unit as 420,000 tons. We reduce the cost of the new plant in that portion, *viz.*, 560,000 to 420,000. It comes to Rs. 13¼ crores.

Mr. Peterson.—That will be about right.

President.—Then we will work it out at so much per ton of output. It is Rs. 13¼ crores. That is for the new industry.

Mr. Peterson.—Yes.

President.—The point is that it is necessary to adjust the value of your plant to that of the new one. What the old scheme provided was that you should get a depreciation of 93¾ lakhs on your plant.

Mr. Peterson.—Obviously as the production goes up, it must decrease.

President.—Apart from the question of exchange we have learnt a good deal about your plant. I think there is some little duplication or some excessive capacity in some directions. Take your plate mill. Obviously it is too big. Then you have got a certain amount of duplication in your plant. You have got the open hearth, you have got the duplex, and then you have got the old and new mills. We may have to take out the old mills altogether, because you are adding Rs. 2 crores of new plant which may enable you to do without them. Some allowance will have to be made for this.

Mr. Peterson.—Take the old mills as scrap.

Mr. Mathias.—Rs. 10 crores which was fixed as the price of the greater extensions last time *plus* Rs. 2·67 crores would give us, subject to other adjustments, the cost of your works as they would be in 1933.

Mr. Peterson.—You have still parts of the old plant which are not obsolete—the open hearth and the three old blast furnaces. These require a pretty heavy capital expenditure.

President.—We take it like this. Making allowance for the drop in exchange, for the fact that you have got some duplication and for the fact that some of the plant has to be scrapped, could we say that if we wrote off, just for the sake of argument, Rs. 1¼ crores and brought it down to Rs. 12 crores, it would be a reasonable investment for a new plant to make and to get an output of 420,000 tons, assuming of course they don't make mistakes in laying out their plant.

Mr. Peterson.—I doubt if they could do it.

President.—We took Rs. 15 crores before. Now you knock out 10 per cent. on the ground of exchange alone from the estimate given by Messrs. Cammell Laird.

Mr. Peterson.—I should like to consult our experts on it as to what the cost would be. We can give you a very fair idea of what the cost of a new plant would be.

President.—You must remember that the new man is supposed to have learnt by your experience.

Mr. Peterson.—We have, as a matter of fact, a detailed estimate for the blast furnace plant.

Mr. Mathias.—You can give us an estimate of the value of these portions of the old plant which will still be working when your maximum output is attained.

Mr. Peterson.—One ought to consider many things. There is the question of collieries. A new plant coming in must have collieries.

President.—Collieries will have to be considered separately.

Mr. Peterson.—One of the most important things for any new steel industry is to ensure the supply of gas coal.

President.—That we will have to add in either case.

Mr. Peterson.—You only want estimates for the steel plant without the collieries.

President.—But the ore mines will be included because I think in your case also ore mines have been included.

Mr. Peterson.—I should like to have time to think it over.

Dr. Matthai.—The whole point hinges on the question whether our former estimate of Rs. 15 crores was correct.

Mr. Peterson.—It may have been correct then. It may not be correct now. Very many things enter into that consideration. The real test of the value of the plant is its productive capacity. Take the case of the blast furnaces. In the last two years we have improved them very much.

President.—As regards blast furnaces their capacity has proved larger than then estimated.

Mr. Peterson.—The blast furnaces are really worth more.

President.—Therefore the man who comes in will not have all these duplications, if he is to confine himself to 420,000 tons of steel *plus* 40,000 tons of pig iron.

Mr. Peterson.—As our plant was finished, there would be very little surplus.

President.—Then it would come to 560,000 tons.

Mr. Peterson.—Take the plate mill for instance. If you propose to roll plates you must have a unit of that size.

President.—What I think may be contemplated by the next man is principally the manufacture of sheets for which there is a big market. It may pay him better to confine himself to sheets and bars principally. The equipment will be very much simpler than yours and for that reason there is less room for any miscalculations. In your case you were attempting to do a great deal more than you ought to have done.

Mr. Peterson.—If you wish to manufacture steel successfully in this country, the first thing is to roll material which is of capital importance to the country. Rails are of great military importance. If you manufacture rails you must have some means of disposing of the off heats that do not come up to rail specifications. Unless you have that it means that the entire heat has to be put back into the furnace which means a very heavy loss and a very heavy cost on rails. Sheet for plates and the merchant mill

take that class of steel. I am explaining our development. Now that rails have been more or less provided for anybody coming in need not consider it. He can make ordinary mild steel.

President.—Supposing he had a sheet mill, he would practically use up all his steel.

Mr. Peterson.—The first problem we had to tackle was the manufacture of rails. A new company would probably not make any rails at all to start with.

President.—He might confine himself more or less to the sheets and bar mill products.

Mr. Peterson.—If you want me to give you my opinion as to whether Rs. 12 crores would be correct, I would like to consult various engineers and let you know when you come to Jamshedpur.

President.—If you further write down your plant by taking the present price of steel, it would probably come to the same result, because the price of steel has dropped further since 1923-24.

Mr. Peterson.—Very much.

President.—I am not confining myself to the figure of Rs. 12 crores. I think that you will arrive at Rs. 12 crores if you make allowance for extensions, depreciation and other things. We have also asked the Tinplate Company to give us their replacement value.

Mr. Peterson.—I do not know that the replacement value is very valuable.

President.—It is not so much the replacement value as the cost of the new plant.

Mr. Peterson.—Assuming that the new plant will be run on very much the same lines as ours, they must have coke ovens, they must have the blast furnaces and they must have a steel plant of very much the same type as ours. One of the most expensive items is the blooming mill. They must have a blooming mill of the same type as our new blooming mill and they must have a continuous mill.

President.—If you eliminated the open hearth and gave an extra duplex plant to the new man, just for the purposes of calculation?

Mr. Peterson.—That would not pay him, because the result would be that he would have a very large quantity of scrap which he would not be able to use or sell. The double process seems inevitable in this country until there are sufficient works in the country to take care of the scrap.

President.—At present we shall work round this figure.

Mr. Peterson.—It would be an interesting thing to do. I will have an estimate prepared.

Dr. Matthai.—The first point on which we require your assistance is whether the original estimate of the Tariff Board was a correct one and the second point is whether the drop in the exchange and the drop in the price of machinery would correspond to Rs. 1·25 crores.

Mr. Peterson.—What the Tariff Board really want to know is what would be the estimate for a new steel plant producing 420,000 tons at present day prices.

President.—There are adjustments to make. He will take five years to complete, for instance.

Mr. Peterson.—I will charge interest on construction. I would have an estimate prepared but it would be a rough estimate.

Dr. Matthai.—The further point on which we would require your expert advice is whether 420,000 tons is a proper economic unit.

Mr. Peterson.—I take it that what the Tariff Board wants to consider is the possibility of another steel works. We will give you a note as to what the cost would be and what products it would probably manufacture.

President.—You must also make some allowance for a possible rise in prices and other changes.

Mr. Peterson.—I will do that. In the present enquiry it is important, and we would like to put on record our opinion for the benefit of other people.

Mr. Mathias.—Would a works producing 420,000 tons be able to bring down their costs to anything like the works costs of Tata's on an output of 560,000 tons?

Mr. Peterson.—They would have to train their labour first. You must give them some time.

Mr. Mathias.—Say 10 years?

Mr. Peterson.—Easily. They might even improve on our costs in certain respects.

President.—They might make more fuel economy to start with.

Mr. Peterson.—Yes.

President.—The whole thing is this. If we are to make any recommendation on this point, it must be a recommendation that would induce capitalists to come in.

Mr. Peterson.—We would like to help you in that respect.

President.—At present we will take Rs. 12 crores as a hypothetical figure.

Mr. Peterson.—I should accept that as a hypothetical figure, but I would like to work it out.

President.—It comes to this. You have got to get Rs. 93·46 lakhs for depreciation. If you spread it over your output of 560,000 tons, how much would it work out to?

Mr. Peterson.—About Rs. 16·7.

President.—In that man's case it would be about Rs. 75 lakhs. You are in the neighbourhood of each other there. If we fixed the cost of his plant at Rs. 12 crores and allowed 6¼ per cent. depreciation—he would get the same depreciation rate per ton on his output of 420 tons as you would when you reached your output of 560,000 tons—so far as that goes there is no necessity for making any substantial alterations whether as applied to you or to the new man, is that right?

Mr. Peterson.—Yes.

President.—It may give you a little more when you reach your full output of 560,000 tons.

Mr. Peterson.—Yes.

President.—This 6¼ per cent. is intended to cover obsolescence also.

Mr. Peterson.—Yes, that is one of the main reasons.

President.—I think that you have admitted that it is a reasonable figure to take.

Mr. Peterson.—Yes. We have two very good instances of obsolescence. One is the closing down of the drag ovens and another is the closing down of the old mills.

President.—Let us finish the general aspect of the question regarding depreciation.

Mr. Peterson.—Personally I regard the question of capital value of the plant as being its earning capacity. Let me put it quite plainly. The earning capacity of the plant is what the Tariff Board should take into consideration when recommending protection. Therefore when you recommend protection at the same time you fix the depreciation and the value of the plant. The initial cost of the plant that is not capable of earning its depreciation is of no value. It is a theoretical value which is of no use.

President.—The plant must earn on that.

Mr. Peterson.—Yes.

Dr. Matthai.—We have allowed 6¼ per cent. As far as I know these things I believe that that is roughly the rate that obtains in the United Kingdom.

Mr. Peterson.—Approximately, yes.

Dr. Matthai.—The position in the United Kingdom is that the steel industry is in a backward condition when compared with America and the Continent. The real reason why things are so backward in England is that they have not scrapped obsolete plant to the extent to which they have on the Continent and in America. Therefore the point that arises for consideration when we are considering the development of the steel industry in India is, is 6¼ per cent. a sufficient rate of depreciation?

Mr. Peterson.—To cover obsolescence?

Dr. Matthai.—Yes, that seems to me to be a very important point. The difference between the United Kingdom and other countries turns upon that.

Mr. Peterson.—I doubt if the English plants have taken 6¼ per cent. regularly in actual money and applied it to renewals or new plant.

Dr. Matthai.—Could you give us figures?

Mr. Peterson.—That is my impression. During the war they did not renovate the plants as they should have done.

Dr. Matthai.—The fact remains that the rate of depreciation is much higher in other countries.

Mr. Peterson.—I will get you information on that.

Mr. Mathias.—The work that you are now doing will replace all obsolescent machinery, will it?

Mr. Peterson.—Between now and 1933?

Mr. Mathias.—Yes.

Mr. Peterson.—We cannot say that. Constantly year after year in the steel industry some new thing is coming in.

Mr. Mathias.—You cannot say with absolute certainty.

Mr. Peterson.—No, I cannot say that we may not have to install something new.

Dr. Matthai.—With regard to steel articles, we have been proceeding more or less on the assumption that if a new plant came into existence the products that it would be able to deal with would be in the first instance sheets and bars. Supposing we had a large development of the steel industry as a result of the protective policy, among the articles in which you are dealing, apart from sheets and bars, what are the articles which are likely to obtain an increase of market or which are capable of further development on a large scale?

Mr. Peterson.—Principally railway material. If we could reduce the cost of rails, there would be a very large railway development at once. If we could reduce the cost of plates, structurals, etc., there would be a big market. In fact there is no product that could not be expected to sell in large quantities, provided the costs are low.

Dr. Matthai.—Normally would you expect a large market?

Mr. Peterson.—Yes.

President.—Take the case of cement.

Mr. Peterson.—You cannot use cement in construction without steel.

President.—That is what I say. You will find in the United States of America that cement has more or less kept pace with the increase in the consumption of steel.

Mr. Peterson.—Yes.

President.—So far as cement is concerned we have not made a beginning.

Mr. Peterson.—I believe we have produced more than seven times the quantity we consume.

President.—But the consumption of cement is so small.

President.—As regards depreciation if we allow 6¼ per cent. it is essential that the whole amount must be set aside. First of all of course it must be earned.

Mr. Peterson.—Yes.

President.—I do not know if any Articles of Association make it obligatory on the directors or the Board to set this aside?

Mr. Peterson.—There can be no obligation to set aside.

President.—Take your own Articles of Association. I don't think there is any obligation on the part of the directors nor do they give them any absolute power to set it aside.

Mr. Peterson.—It gives the directors absolute discretion—Article 122 (15). I don't think their decision on the question can be interfered with. I think it lies at the absolute discretion of the Board.

Dr. Matthai.—Is it like the powers of Government in regard to the Finance Bill?

Mr. Peterson.—I am not sure.

President.—Supposing the directors had power with which the shareholders could not interfere. What would happen? Directors are shareholders themselves. Ordinarily speaking directors would be very large shareholders and in your own case that is so.

Mr. Peterson.—Yes, most of them are large shareholders.

President.—When they find that they are having a succession of lean years they may say ' why should we set aside so much for any depreciation '? That has actually happened in certain industries. I am talking of all industries generally. The result has been that they have not set aside a sufficient amount either for depreciation or for reserves. Now, in an industry which is considered of national importance and in which the State is asked to come to the rescue, I think the State is entitled to see that this part of the earnings of the company are utilized for purposes for which they are intended.

Mr. Peterson.—I would not like to express an opinion but I doubt whether it could be done legally.

Dr. Matthai.—The arm of the law can be made long enough to embrace almost anything.

President.—Let us consider it apart from the question of law.

Mr. Peterson.—So far as the Steel Company is concerned the Board of Directors have always set aside large sums for depreciation and I think you might be satisfied with a declaration that they would do so.

President.—You don't know what other companies might do. It must be understood by people who want to start a new company that they are not to raid the depreciation fund whatever happens, and the shareholders must know that it must be set aside before they take the shares.

Mr. Peterson.—As a matter of fact shareholders do not usually read the Articles of Association when they buy shares.

President.—Do you agree, if it was feasible, that it should be declared that debentures would be the first charge on the company and then the depreciation?

Mr. Peterson.—Would you like me to get the opinion of the Board of Directors on it?

President.—I am just asking for your personal opinion.

Mr. Peterson.—I have no instructions from the Board on the point, but I can give my personal opinion. I think it would be an advantage for industries requiring State assistance on national grounds to give a declaration that the funds will not be wasted. It may enable a new company to obtain its capital. I don't quite understand the machinery by which you propose to do it.

President.—We might include that in the Steel Industry (Protection) Bill.

Mr. Peterson.—You mean to make it a condition of the Act that the amount calculated for depreciation should become a first charge after any debentures? I don't think it would be unreasonable for the State to make such a provision.

President.—You may convert the whole stock into debentures and say it is the first charge?

Mr. Peterson.—Depreciation could not take precedence of interest.

President.—It seems to me that there should be a certain amount of control.

Mr. Peterson.—When we were considering the question of the Greater Extensions we decided that we must set aside a certain amount of depreciation for the Greater Extensions. The shareholders were bound to that scheme for five years.

President.—That may be as regards yourselves but as regards any new company coming in Government cannot specially legislate for them so it would have to be on general lines. It may be that somebody may have to see how the depreciation fund is spent, but that may not necessarily be such a great interference.

Mr. Peterson.—Government could I suppose lay down rules as to the allocation of depreciation and the money so obtained. I don't think that any industry applying for protection could have any objection to such a proposal if it were put in a position to earn the depreciation by state aid.

Dr. Matthai.—What is the present practice with regard to depreciation as between the shareholders and the directors. The directors propose a certain amount of depreciation in a particular year; the shareholders have the right to say yes or no. Is that the practice?

Mr. Peterson.—Not to say yes or no, but to pass the accounts as presented.

Dr. Matthai.—Supposing they say no?

Mr. Peterson.—Then they don't pass the accounts.

Dr. Matthai.—Then what happens?

Mr. Peterson.—Nothing happens; the company continues.

Mr. Mathias.—The depreciation decided on would be taken as a charge against profit before a dividend is declared.

Mr. Peterson.—Yes. I don't think it would be possible for the shareholders to resist the decision of the directors without turning out the Board.

President.—The point is this, that your directors are really dependent upon the shareholders for their continuance in office?

Mr. Peterson.—Ultimately yes.

President.—If there was a strong feeling among the shareholders against setting aside, say, Rs. 90 lakhs in a particular year, or supposing there was a feeling that it was too much, then you see, although there may be nothing in writing in the machinery, that feeling must necessarily react.

Mr. Peterson.—Undoubtedly.

President.—That seems to me practically the most important point. Whatever might be the present machinery, supposing the shareholders thought 90 lakhs of rupees was an excessive amount, your directors so long as they were dependent on the shareholders for their office must take account of that feeling.

Mr. Peterson.—Ultimately yes. But it is not likely to happen.

President.—I want to see what you have been doing as regards depreciation. You earned Rs. 213 lakhs during the last three years. For the first two years you earned Rs. 120 lakhs. How much did you set aside?

Mr. Peterson.—Rs. 64 lakhs I think.

President.—We have not got the last year's accounts. What would you set aside for last year?

Mr. Peterson.—It would be about the same.

President.—The point with regard to this depreciation is that a part of it is intended for obsolescence, but as a matter of fact I think you have been using most of it in your extensions.

Mr. Peterson.—Yes. These extensions are intended to meet obsolescence.

President.—But there are quite a lot of new things which are purely extensions.

Mr. Peterson.—Yes, but to get rid of the obsolete part of the plant.

President.—Depreciation is intended for three purposes, replacement, renewals and obsolescence. When I speak of replacement, I mean that you will replace a particular thing by something else. But it seems to me that you are spending more money on extensions and obsolescence than on ordinary replacements and renewals. Is it not so ? I am talking of the general impression that is left on my mind.

Mr. Peterson.—The plant is continually kept up to date and repairs are made as they may be necessary.

President.—That comes into your ordinary works costs?

Mr. Peterson.—Partly. Take the repairs to the blast furnaces. We will probably have to replace the blowers, and that money will probably have to come from the depreciation fund.

President.—Take the re-construction of your open hearths. That really is a sort of renewal, is it not?

Mr. Peterson.—Yes. That will also come out of the depreciation fund.

President.—Is it correct to state that most of this money is used in extending your plant which would require new capital?

Mr. Peterson.—No, mostly used on replacements.

President.—When you use the depreciation fund for entirely new extensions which really ought to be financed out of fresh capital, you are using your depreciation fund for a purpose for which it is not intended.

Mr. Peterson.—I take it the depreciation fund is really a reserve and obsolescence fund.

Dr. Matthai.—In practice is there any distinction really between reserve fund and depreciation fund?

Mr. Peterson.—Not really. But what happens? Take the Coppee Ovens, for instance. They were perfectly sound and a very good plant when originally installed. Owing to alteration in practice we have to scrap them and put in new ones. That is the kind of purpose for which the depreciation fund is used.

Dr. Matthai.—Supposing you had a plant and it had become obsolete, the only way in which you could put it again into operation is by spending over it possibly the whole of the money which it cost you to build it, or possibly more if you had installed a modern plant. Is it extension or renewal?

President.—Take the addition to the duplex plant which you just now pointed out. It is really an extension; it is not a replacement of anything What would you call items like that?

Mr. Peterson.—A considerable part of this will be extension, and a part of it renewal.

Dr. Matthai.—Supposing the whole of the depreciation fund that you earned went into the works and remained there as part of the capital value, from an industrial point of view would it be considered a sound arrangement?

Mr. Peterson.—Yes.

President.—Take List " B " for instance. They are not really replacements or renewals. The point I am trying to impress upon you is this. If you take this from the depreciation fund as you propose to do, then in that case though these are extensions you won't earn any depreciation on these at all.

Therefore when the time comes for replacing them you will find that you had not enough money. That is the position.

Mr. Peterson.—That might result except that from the commercial point of view as the production went up the profits would increase and we would increase the depreciation. I would add personally the whole of this to the capital account and increase the depreciation accordingly. In my own estimates I have done that. I have taken the allowance for depreciation. That must be done obviously. The finance comes from the depreciation reserves. But there will be an increase in the capital account.

President.—The objection is that when you are taking money from the depreciation fund you are not entitled to treat it as capital. That is the difficulty. That I think we felt in the first enquiry too.

Dr. Matthai.—I am not very clear about this. The whole test of depreciation is the extent to which your costs are brought down or rather your costs are not allowed to rise. If you use the depreciation fund for improving the plant, to that extent you are preventing your costs from rising. Supposing you increase your output either by renewals or extensions and bring down your costs by the depreciation fund, that use is legitimate.

Mr. Peterson.—That is really how we use it.

Dr. Matthai.—So that you cannot draw any hard and fast line between extensions and renewals.

Mr. Peterson.—May I explain how I put this. I have not asked for any additional depreciation.

President.—That is perfectly true. We have to devise a scheme which must in the result help to establish the industry. You may simply say "I don't want any depreciation" and run the plant to death. Could we do permit it?

Mr. Peterson.—We have no intention of doing it either.

President.—What we really want to know is that there must be some distinction made between the amount that you spend on actual extensions which must really be fresh capital and the amount you spend on renewals.

Mr. Peterson.—When I talk of obsolescence, I have in mind the instance where we have replaced Evence Coppee Ovens.

President.—This list B is entirely a new thing, Rs. 60 lakhs. It is a small amount.

Mr. Peterson.—What I am trying to point out is that the actual use of the depreciation fund against preventing obsolescence mainly would lead to an increase in the actual depreciation. You substitute the older thing by a newer thing which costs more.

President.—The main thing is you must have the money to do it.

Mr. Peterson.—Yes.

President.—On principle if it works all right you should not have any more money than what would suffice to enable you to renew the old plant.

Mr. Peterson.—You are quite right.

President.—There is something there that has not been taken into account by you.

Mr. Peterson.—This list may be treated as part of the extensions and additional depreciation ought to be allowed on that.

President.—You have got to find the money. The moment you take it from the depreciation fund the same difficulty arises.

Mr. Peterson.—That is not represented in the capital. It will be shown on the asset side.

President.—You cannot. That is not capital on which you are entitled to earn a dividend, because it has already come out of the depreciation fund. We will have the very same difficulty which we had before.

Mr. Peterson.—We built a large part of our extensions out of this depreciation fund.

President.—Therefore we had to write down their value.

Mr. Mathias.—Taking your final production of 1933-34 could you give me the replacement value of such portions of the old plant (for instance, the blast furnaces, the open hearth and so on) as will be in use in the works then *minus* the amount of depreciation coming out of this list B?

Mr. Peterson.—There will be other depreciation too. This does not take the whole of the depreciation. In order to ascertain the replacement value of such portions of the old plant as are in existence and in use in 1933-34 when full production is obtained, you must take the value of each unit separately, estimate the life for it and write off the amount of depreciation on the original cost.

Mr. Mathias.—What would be the items?

Mr. Peterson.—The blast furnaces, the coke ovens and the open hearth.

President.—I think that this difficulty will not arise in the case of the new Company.

Mr. Peterson.—No.

President.—In your case you would be getting depreciation on Rs. 15 crores. Supposing you were to scrap the whole plant and to build a new one you would require Rs. 17 crores. That is what it comes to.

Mr. Peterson.—That is right.

President.—But if there is no way of your being able to raise fresh capital you will be short by 2 crores.

There is now one point which I want to clear up as regards depreciation. The position is that you have given these high dividends in certain years (Statement No. 56).

President.—We will take first of all the whole amount of dividend that you paid out. This is Rs. 3 crores and 52 lakhs. In the same period how much did you set aside for the depreciation reserve fund?

Mr. Peterson.—At that time the depreciation amounted to Rs. 4·75 crores but there were other reserves in the balance sheets.

President.—So far as the preference shareholders are concerned you must pay the dividend before carrying anything to reserves.

Mr. Peterson.—If the money is earned, we must pay the dividend.

President.—The dividends that you paid on ordinary and deferred shares in this period amounted to Rs. 248 lakhs. Against that how much did you set aside for depreciation up to 1921?

Mr. Peterson.—Roughly 2½ crores up to March 1921. As I say there are other reserves in the balance sheet.

President.—You paid, out of that, Rs. 80 lakhs to deferred shareholders and you got back Rs. 96 lakhs by way of premium.

Mr. Peterson.—Yes.

President.—Not counting the preference shares, I want to know what return the ordinary shareholders got.

Mr. Peterson.—In the original evidence on page 220 of the 1st Report there is a note showing the total amount distributed. In 16 years the Company paid Rs. 82 for each ordinary share.

President.—They have not been paid anything during the last four years.

Mr. Peterson.—No.

President.—What is the average return on ordnary shares?

Mr. Peterson.—I haven't got that worked out. It would be about 6 per cent.

President.—The other charge under overhead is interest on working capital. You say that you have found this 3½ crores that we took as a satisfactory figure.

Mr. Peterson.—Yes.

President.—The rate we took at 7½ per cent. It may be slightly cheaper now.

Mr. Peterson.—We are not borrowing at less than 7½ per cent. on an average.

President.—So, this incidence per ton of Rs. 6·09 is more or less reasonable.

Mr. Peterson.—There has been a reduction in the rate of interest in India. It may come down in the course of two or three years. At present, the rate that we pay on an average is about 7½ per cent.

Dr. Matthai.—If you take a general review of the circumstances you are justified in expecting a lower rate.

President.—It is ordinarily about 2½ per cent. higher than the Government rate.

Mr. Peterson.—Our first debenture which carries 7 per cent. could be bought to-day at £92.

Mr. Mathias.—They are quoted at that on the home market.

Mr. Peterson.—Yes.

Dr. Matthai.—If you took the interest on the working capital at 7½ per cent. in 1924 looking to the conditions of the money market, I think you would be justified now in taking 1½ per cent. off that.

Mr. Peterson.—We cannot borrow at 6 per cent.

Dr. Matthai.—Government paid last time Rs. 4-13-0. It is going to be still lower.

Mr. Peterson.—Undoubtedly there has been a reduction in the last 5 or 6 months in the rate.

President.—It works out to 2 to 2½ per cent. higher than the Government interest.

Mr. Peterson.—Yes.

President.—So far as your Bombay expenses and Agents' commission are concerned, the incidence works out to Rs. 2·89. Taking Rs. 12 crores as the capital and allowing 6¼ per cent. on it, the depreciation comes to Rs. 17·85 per ton. Then, we take the same figures as before—the interest on working capital Rs. 6·09 and head office expenses Rs. 2·89. The total is Rs. 26·83 as compared with Rs. 30·70 before. We add Rs. 100 for works costs, so that you ought to get a price of Rs. 126·83 excluding profits.

Mr. Peterson.—Yes, that comes to very nearly my figure.

President.—As regards profit, so far as you are concerned, you claim Rs. 120 lakhs. We shall not take pig iron into account for the present. Here is a capitalisation of Rs. 12 crores and we have got to consider what would be reasonable for a man coming in. You have got certain facts to remember. The first thing is that the Steel industry is in a state of great depression all over the world.

Mr. Peterson.—Yes.

President.—The second thing, I suppose, would be the fact that your firm particularly has not done very well.

Mr. Peterson.—No.

President.—Naturally any man looking at the investment would say, here are Tatas and this is what they did. This is a factor which any man would take into account. Thirdly, there is this fact that under a policy of protection it would be an inducement to an investor to invest his money provided he was satisfied that the policy of protection was working satisfactorily. As regards the first two points, you have given your opinion. As regards the

third point, *viz.*, the confidence of the investor in the policy of protection, what allowances are we to make for it? Do you think that the policy is so well established that an investor might take it for granted that he would get protection?

Mr. Peterson.—Provided the results of this enquiry provide a reasonable hope of return I think he would.

President.—I am looking at what has taken place so far. This morning we have been looking into the scheme of protection. Bearing that in mind and also the fact that the scheme was applied in the case of other industries, do you think that the inducement is sufficient at present?

Mr. Peterson.—No, but if the result of the present enquiry showed that there was a sufficient margin of protection and for a sufficiently long period, then I think that there would be sufficient inducement. I think that it is the uncertainty rather than the amount that deters the investor.

President.—Uncertainty arising from?

Mr. Peterson.—From the fact that he cannot say what is going to happen. The period has been so short.

President.—Also whether protection would remain effective or not.

Mr. Peterson.—Yes. Exchange has a great deal to do with it but that question won't arise again with the publication of the Currency Commission's report. The first point which an ordinary businessman would consider is the question of exchange.

President.—Which exchange are you talking of?

Mr. Peterson.—The rupee exchange as against sterling. If he was satisfied that the exchange was stable or likely to be stable or at any rate likely to fluctuate within a narrow margin, so that his price was assured, and if protection was sufficient, then he would take the risk.

President.—You have been given an average return of 8 per cent. Will the industry be able to get all its capital at 8 per cent.?

Mr. Peterson.—I don't think so.

President.—What do you consider a reasonable rate?

Mr. Peterson.—I should think 10 per cent. I would not reduce it.

Mr. Mathias.—On the ordinary capital?

Mr. Peterson.—The average return on the capital invested.

President.—An all round return of 10 per cent.?

Mr. Peterson.—Then, I think, people would come in.

President.—Say, one-third of the Capital (1st preference) carrying 7 per cent. and the other two-thirds about 13 per cent.?

Mr. Peterson.—But you would have to deduct the cost of raising the money, which would be 5 per cent. For every hundred he raises he would get Rs. 95. I am talking of 10 per cent. on the nominal capital.

President.—Under that?

Mr. Peterson.—Under that it would be doubtful.

Dr. Matthai.—Supposing as a result of the Currency Commission's recommendations we are going to have an era of stabilised exchange in the country barring variations within gold points, and then on the top of that you get a definite guarantee from Government that the Steel industry is going to receive protection, say, for ten years, supposing these two conditions are satisfied, don't you think that 8 per cent. would be a sufficient inducement for any new steel unit to come into existence?

Mr. Peterson.—If Government guarantee even less than 6½ per cent., it would be a sufficient inducement, but if the protection is intended to give that return, investors will naturally turn to the experience of the past three years.

Dr. Matthai.—Supposing the policy of protection is going definitely to stand for 10 years, would the fact that Government occasionally may vary the rates, seriously upset the confidence of the investor?

Mr. Peterson.—He would certainly turn to the experience of the past three years. He can do nothing else. I will put it this way if I may. If an excessive profit to the investor is regarded as a calamity under the scheme of protection, I don't see how it can ever succeed. It is exactly the excessive profit that he looks forward to.

President.—Your point is that protection has not been effective.

Mr. Peterson.—Yes. I don't see how Government or anybody else can guarantee that protection is going to be effective. It depends on so many outside considerations.

President.—So far as it lies in the power of Government?

Mr. Peterson.—The best way of giving that guarantee is to provide a sufficient margin.

Dr. Matthai.—In this country you have got to consider various interests.

Mr. Peterson.—Yes, but you are asking me a specific question on what basis a capitalist will invest his money in the Steel industry.

Dr. Matthai.—Taking facts as they are, you say that there ought to be a margin of safety. But the margin of safety has got to be very carefully considered. In a country like this where the bulk of the people live by agriculture, you cannot levy a burden upon the consumer generally in the way in which you could in other countries. In allowing a margin of safety we have got to take every possible care with regard to the other interests upon whom the burden will be thrown. Therefore taking all these facts into consideration, supposing there was a general declaration that this policy would continue for, say, 10 years, don't you think that it would be sufficient?

Mr. Peterson.—Supposing Government gave a guarantee of 8 per cent.?

Dr. Matthai.—No guarantee of interest.

Mr. Peterson.—That is really my point. Take the case of the new man. He will have to spend Rs. 12 crores, and your protection is intended to provide him with Rs. 96 lakhs a year. I say that the difference between Rs. 96 lakhs and Rs. 120 lakhs ought to be the measure of your margin. I don't think that even so he would get over Rs. 96 lakhs. If you start off by providing for 8 per cent. he may get 2 per cent. or even less.

Dr. Matthai.—The really important thing is the uncertainty on which the Steel industry has been working in the past. The uncertainty ought to go and it would if protection was granted for a long enough period.

Mr. Peterson.—The longer the period, the more you can reduce the margin of safety.

President.—Would a declaration of policy inspire confidence?

Mr. Peterson.—A declaration on the part of Government that they intended really to see that the scheme would be effective would certainly inspire confidence.

Mr. Mathias.—The margin between 8 per cent. and 10 per cent. that you suggest depends really on the margin that we allow on protection.

Mr. Peterson.—That is what it really comes to.

Mr. Mathias.—If we recommended such a margin of protection as to make the investment sufficiently attractive, you would probably get your money at 8 per cent.?

Mr. Peterson.—That comes to the same thing. The real reason why the margin is necessary is not the uncertainty of the cost of production, but of the world prices. That is the way in which you ought to provide for the margin. Nobody can anticipate the course of prices. It is impossible to do that.

President.—It may be said that in our previous calculations no account was taken of any contingencies.

Mr. Peterson.—You must take account of contingencies if you are going to protect the new investor.

President.—The result was that even before our recommendations were given effect to, they required modification.

Mr. Peterson.—That is practically what happened.

President.—So, you say that it should be provided for by this margin.

Mr. Peterson.—Yes. The scheme should be put so high that it would effectually meet any of these contingencies. It would also be possible to provide some machinery whereby, if the profit became too much, the burden on the consumer could be taken off by a special tax on the industry.

Dr. Matthai.—We are considering here the psychology of the investor. I have great respect for your opinion but you are interested in the Steel industry and I must make some allowance for that. If it is laid down by Government that there would be protection for a period of ten years, the investor must necessarily get the impression that at any rate against big losses there is a certain amount of insurance which was not there before. If in addition we are going to have a stabilised exchange there would be such an improvement upon the existing conditions of the Steel industry that there is every possibility of new steel units coming into existence.

Mr. Peterson.—Assuming that the return would be only 8 per cent.?

Dr. Matthai.—I am anxious that the margin should not be any greater than is absolutely necessary.

President.—This particular industry has got a bad history. It has got to live it down. Then, the investor must feel before he puts in any money that the protection is not only adequate but that it would remain adequate whilst the industry requires protection. I want to know whether what we have been doing so far and what the Government and the Legislature have been doing has impressed the investor.

Mr. Peterson.—No, it has not.

President.—Supposing our recommendation was the same. Last time we said the policy of protection must be declared—it was declared—and we also suggest that in order to make the protection effective the Governor General in Council must have power to make it effective.

Mr. Peterson.—I should try and make that automatic if possible.

President.—It is not that the declaration is not there, but how has it worked? You cannot blame Government for this. Whilst they were making their arrangements to give effect to their proposals fluctuation in prices made the protection ineffective.

Mr. Peterson.—You have exactly the same conditions existing to-day.

President.—The point is this. You have got to examine the psychology of the investor and I want to know, supposing you were investing your money in the industry to-day what would you do?

Mr. Peterson.—I would wait until I saw the result of this report.

Let me put it this way. The actual inducement to new capital coming in will depend very much on what is going to happen to this Company in the next three years. It will depend very much on the balance sheets of the Company. Already the tide is turning and people are taking a different view of the prospects of the industry and I think we will probably go on improving from year to year provided the Steel Company does what it says it can do and adequate protection is given.

President.—You say 10 per cent. is the kind of figure we can take all round.

Mr. Peterson.—I think 10 per cent. would leave a sufficient margin for the new investor.

President.—If you allow 10 per cent. on 120 lakhs—I am not taking pig iron into account—that works out to about Rs. 28. That gives an incidence of Rs. 28 per ton, and brings the selling price to about Rs. 154·85 on 1925-26 figures.

Mr. Peterson.—Yes. But the average costs for 1925-26 for all finished steel were higher.

Dr. Matthai.—That excludes pig iron?

Mr. Peterson.—That excludes the profit on pig iron.

President.—If you allowed Rs. 8 lakhs for pig iron that would leave it at Rs. 152 against our Rs. 180 before.

Mr. Peterson.—Yes. Excluding the profits on pig iron that is very much the figure we have put forward.

(Continued on the 23rd June 1926.)

Measure of protection necessary to enable new steel making plants to be brought into existence.

President.—We were discussing the question of fair selling price yesterday. In your case we took last year's works costs as Rs. 100 in round figures. So far as you are concerned it is not very difficult to make adjustments to arrive at the future works costs, but if our scheme is to be of any service to a new works, it is rather a difficult matter. We don't know when a newcomer would reach the point at which you start to-day. One of the methods we can apply is this; we can form some estimate from the experience of your Greater Extensions. It has taken, I think, three years to get them into full operation after they were completed and you have had one year's experience of nearly full working. We may assume that pig iron for use in the steel furnaces is available for any new Company coming in. But after that point they have got to go on to the manufacture of steel.

Mr. Peterson.—They would have very little difficulty in their open hearth process because they have all the process worked out for them by us already.

President.—The training of the men will take time. Even on the open hearth it took time before you got your full output. How long do you think it would take?

Mr. Peterson.—I should say it would take three years from the completion of the plant to make them efficient. In the case of Tinplate Company it has just taken them three years to get into full operation.

President.—They started the Company in 1920.

Mr. Peterson.—I mean after construction is complete and after operation begins.

President.—How long will it take to construct?

Mr. Peterson.—I don't think you can put up a complete plant under five years, that is so say from the ore mines and the blast furnaces right through. I think it would take five years at least. If you take the Indian Iron and Steel Company, for instance, they might be able to roll steel within three years. They have the blast furnaces complete; the whole of their practice has been worked out. All they have to do is to put up the open hearth plant and the necessary mills and I think they can get the thing going in three years and another two years to get full efficiency. I think they have themselves given some evidence on this point.

President.—If you have to start from the blast furnace upwards?

Mr. Peterson.—Add two years.

President.—That is to say five years to complete the erection and three years to get full production. If you have got the blast furnaces already erected—

Mr. Peterson.—They will take two years, for full production.

President.—You took three years?

Mr. Peterson.—Because that was an entirely new thing. It is all a question of engaging the staff and getting good men. That is where the real difficulty comes in. Steel works in this country will only obtain inferior men to start with and it is a matter of weeding them out.

President.—They may be able to get some of your men.

Mr. Peterson.—I hope not!

Dr. Matthai.—In the case of people who have got to start right through from the ore mines, it would mean seven years and in the case of those who have already got the blast furnaces it would take five years, is that what you mean?

Mr. Peterson.—It would take three years on the completion of the plant to really become efficient.

Mr. Mathias.—Would that be an open hearth plant?

Mr. Peterson.—From the completion of any unit we really get full efficiency if we take three years. It does not make any difference whether you install the open hearth or the tilting-furnace. If they install the duplex process they may have difficulty.

Mr. Mathias.—Mr. Alexander said one is complementary to the other.

Mr. Peterson.—Necessarily. Much depends on the quantity of scrap available in this country. The open hearth won't work satisfactorily without large quantitites of scrap and you cannot get large quantities of scrap in this country. In the duplex you produce large quantities of scrap which can be used in the open hearth. That is why we say one is complementary to the other.

Mr. Mathias.—Therefore it may be necessary to install both and this would take longer.

Mr. Peterson.—I don't think it would take longer to install but it would take longer to work the process.

Mr. Mathias.—What period would you add?

Mr. Peterson.—I would not make any difference.

Dr. Matthai.—Taking the conditions as they are in India, supposing one suggested that from the date on which our scheme of protection comes into force it would take another five years for another steel unit to come into existence, would it be a fair statement?

Mr. Peterson.—Yes.

Mr. Mathias.—A completely new firm?

Mr. Peterson.—I think they would be able to make steel within that time.

President.—They may not get good results.

Mr. Peterson.—It is so difficult to give an opinion on that. For instance, if one of the big English steel makers, Messrs. Cammell Laird, came out here, they would presumably send out their own trained men.

President.—Supposing the Indian Iron and Steel Company started they would probably take five years to complete the whole thing and reach efficiency. Another man would take another five years before he begins to manufacture steel if he has to start from the blast furnaces and it would probably take another three or four years before he gets full efficiency.

Mr. Peterson.—Yes, a couple of years before he got full production.

President.—Supposing Cammell Lairds or any other big steel firm which had an idle plant were to dismantle the machinery and bring it out here, in that case how long would it take?

Mr. Peterson.—Actual foundation and drainage, etc., will have to be done here. I don't think they would save very much time if they were to do that. It took us 11 months to erect the Batelle furnace in this country.

President.—You would have to prepare the foundation in any case.

Mr. Peterson.—During the time they are laying the foundations they could be getting the machinery made. Then again one danger is that in bringing out dismantled plant from England they would be likely to get obsolete machinery. They would keep the up to date machinery and send you those that are obsolete.

President.—It won't pay them to do that. If you propose any scheme it would be on the assumption that it is a modern plant. They may put the value of the plant at scrap value; then the overhead charges would be nil, but the operating cost very high.

Mr. Peterson.—I don't think you would get a modern plant from England. I don't think you will find any modern plant shut down. You can save a good

deal of money possibly by buying part of the machinery, the blast furnaces for instance.

President.—The point is this, whether you take five years or seven years there is a considerable period during which the capital is not earning, and also there is a period during which the costs would be high. In a case like that what sort of adjustment would you propose?

Mr. Peterson.—I think the best way to meet the case of a new company would be a bounty on the condition of production of a certain tonnage of steel by a certain period.

President.—That brings us back to the same question, namely, what is the measure of the bounty?

Mr. Peterson.—The measure of the bounty should be sufficient to pay a reasonable interest during construction on the capital invested. The other way of doing it would be by means of a State loan or something of that kind.

President.—The Government repeatedly declined to give State aid in that form, so you can lay that aside for the present.

Mr. Peterson.—I think the only way you can meet that difficulty is by a bounty.

President.—You can do it that way or you can give them a higher price when they have reached the full output.

Mr. Peterson.—The difficulty is how you are going to discriminate between them. If you give them a higher price, you give every one a higher price. The only solution to the difficulty is to give them a special bounty.

President.—During the period of construction and up to the stage of economic production.

Mr. Peterson.—If it was possible. We don't know what the bounty is going to be. We might begin to complain of unfair competition. If the bounty was so arranged that the new producer got approximately the same margin as we would ourselves get based on our works costs, we would not have much cause to complain.

President.—We do not know what their works costs are. We have to find out the difference between your works cost and theirs.

Mr. Peterson.—If you gave them the difference, that would have to be ascertained year by year as they manufactured.

President.—There is one other thing also. Supposing we say that the new works coming in ought to get a certain amount up to the time it reaches full production, in that case we would have to exclude you from the scheme of bounties. Otherwise you may say you are going to double your plant and claim the bounty.

Mr. Peterson.—If you were to do that, we could very easily form another company and claim the bounty in the same way.

President.—Would that be economical?

Mr. Peterson.—It might be.

President.—It is much better to have one plant of a million ton capacity than to have an extra plant of 420,000 tons.

Mr. Peterson.—There would be a limit to our plant on the present location by reason of the difficulty of assembling the materials. We could not get beyond a certain production unless the railway facilities are doubled which is extremely unlikely. There is another difficulty. The supply of water would limit the output of our plant at Jamshedpur. There is not enough water in the river.

President.—I have never heard of that up till now. It comes to this that in any scheme of bounties the Legislature may have to exclude by name the Tata Iron and Steel Company.

Mr. Peterson.—Or the existing companies.

President.—If they are started after the commencement of the new Act.

Mr. Peterson.—Yes, you would have to discriminate between the two from the blast furnaces. The Indian Iron and Steel Company's blast furnace practice is as efficient as ours to-day.

Dr. Matthai.—From the point of view of a new steel plant coming into existence, it would, of course, necessarily expect—that has been so in the history of the Steel Industry—that during the first five years while the thing is being erected the capital would lie idle. The loss due to capital being idle during the period of construction is a loss that everybody would expect as a matter of course.

Mr. Peterson.—If your scale were sufficiently high they might spread the initial loss over a period of 10 or 15 years.

Dr. Matthai.—Could you expect them to ignore it?

Mr. Peterson.—They might.

President.—Every steel unit coming into existence should expect its capital to lie idle the first 5 years.

Mr. Peterson.—Yes.

President.—Look at your own case. The capital remained idle. You have accumulated Rs. 2 crores of arrears (preference shares) which you have not been able to pay yet.

Mr. Peterson.—Our capital has remained idle for more than that.

President.—They have not been paid for the last five years nearly.

Mr. Peterson.—You would have to make the prices more remunerative and the chances of profit would have to be very much greater if you want anybody to come into the industry.

Mr. Mathias.—Do you propose a method of bounties for the period during which the steel works are being constructed or for the period after the steel works have been constructed and before full production is attained?

Mr. Peterson.—Until they reach real efficiency.

Mr. Mathias.—From the time the construction is complete.

Mr. Peterson.—In their original capital they will provide for the interest charges during the period of construction. I have suggested two years to get full production. It may be 5 years before they earn anything like a reasonable profit. During that period they must have some inducement to carry on.

Mr. Mathias.—Is it possible to proceed on these lines; namely, to take, for the purpose of calculating overhead charges for a new company, the production of Tatas 5 years before their full production was reached?

Mr. Peterson.—It would be very difficult.

Mr. Mathias.—You don't think it would be possible.

Mr. Peterson.—I don't think so.

Mr. Mathias.—In 5 years from a certain date Tatas will be producing their maximum output and I understand that a new works might reasonably be expected to attain full efficiency in a period of 5 years. Could we not adopt the figures of your works 5 years before full protection is attained for the purpose of calculating what protection would be required by a new firm?

Mr. Peterson.—Take our particular case for instance. The Greater Extensions were started in 1917 and completed in 1924. We cannot compare that period with any subsequent period that is going to occur. Part of that period was during the war. Some of our own consignments were actually sunk. I don't think how we are going to make any comparison.

Dr. Matthai.—Let me put it this way. Take your future programme. I find that in 1930-31 you are expecting an output of 500,000 tons. Supposing, for example, next year a new steel business is going to be started in this country with the whole benefit of your experience at their service and they are starting with the latest and most up to date plant and supposing I suggest that in the course of five years during which the process of construction goes on, they would be able to reach 500,000 tons and their works cost would work

out to be the same as yours at the end of that period, would that be a fair thing to say?

Mr. Peterson.—I put it this way. It took us six years to construct the greater extensions and any new plant coming into operation has got to do a great deal more than that, because we had already the existing plant, ore mines, collieries and railway facilities. We had a system of railways by which the materials are collected. They will have to do the whole thing. I don't think they will have any chance of doing that under 5 years.

President.—That is the period that was given to us during the last enquiry.

Mr. Peterson.—Then there is the period of two years more during which they will have to attain the maximum production. Therefore I would put that period of 7 years for them to get full production.

Dr. Matthai.—At the end of 7 years.

Mr. Peterson.—At the end of 7 years they should be on an equality with us. In fact if they got an absolutely modern plant they might even do better or they should do better.

Mr. Mathias.—At the end of 7 years they ought to be able to turn out steel as cheaply as you.

Mr. Peterson.—Proportionately.

Mr. Mathias.—If we distributed the overhead charges of a new company on the supposition that their output was to equal Tata's output seven years before maximum output was obtained, would that be fair?

Mr. Peterson.—No. During the first six months their output would be practically *nil*. They might have great trouble. Supposing they were rolling rails, they might get their seconds going up to 35 and 40 per cent. That was what actually happened in our steel works after we had been in existence for 10 or 15 years. Even last year our seconds went up to 30 per cent. You have got to realise that anybody starting steel works in this country is up against great trouble for at least two years.

Dr. Matthai.—Putting it generally, comparing your position with the position of a new business that comes into existence, the advantage that you have is this that you are already in the field, that your men have been trained and that you have established your connections. You being a pioneer industry you had to face difficulties and losses which they would never have to face. Therefore roughly setting one thing against another, don't you think at the end of 6 or 7 years they ought to be on an absolute equality with you?

President.—The way I put it is this: whatever may be taken as your fair selling price that will have to be modified with reference to the new comer by means of bounties.

Mr. Peterson.—For the first two years of his operation.

President.—Let me put it this way. We don't know when he is going to come.

Mr. Peterson.—No.

President.—All that we can say is that for a certain number of years after the commencement of the production of steel in this country the bounty becomes claimable. That scheme shall remain in force. As it takes five years to construct a new steel works, 5 years from the date of the new scheme the State should pay so much bounty per ton and for so many hundred thousand tons spread over a certain period.

Mr. Peterson.—After 5 years.

President.—We should not say five years. From the commencement of the manufacture of production of steel until the output of steel in this country has reached altogether one million tons or whatever the figure, the bounty shall be paid at a certain rate. I have looked into other schemes of bounties. Take for instance Australia and South Africa. They put down 10 years or so as the period. In this case if you put down 10 years, and as no works may be started for 7 years, the scheme may not come into operation effectively within the period.

Mr. Peterson.—Yes.

President.—It may be therefore expedient to say that after the commencement of manufacture of steel by any new company, the bounty shall be paid until such time as the production of steel has reached a certain limit.

Mr. Peterson.—Then you put a total limit.

President.—Leave it to Government to decide according to the then conditions. We do not know what may be the conditions after five years. It may require Rs. 10, Rs. 15 or Rs. 30 a ton. That is really our difficulty. If it is to come into force immediately then we can say during the next 20, 25 or 30 years, but the thing itself may come into effect on an indefinite date.

Mr. Peterson.—I think it would be extremely difficult for the Board to decide until they had a definite proposal.

President.—We cannot wait until somebody comes forward and makes such a proposal.

Mr. Mathias.—Would it be possible to devise a general scale of duties which would enable a new works to carry on?

Mr. Peterson.—My view has always been that you should put on a duty that would make it absolutely prohibitive to import steel. You must then get full development in this country.

President.—I am now trying to arrive at what the selling price of the new comer ought to be and I take it, to your works cost we will have to add a certain amount.

Mr. Peterson.—That will have to be the measure of his difficulties.

Dr. Matthai.—Supposing we are providing protection for a period of 15 years and at the end of 7 years these people come into existence and start with an up to date plant, you would admit that they would be in a better position in some ways.

Mr. Peterson.—They would be.

Dr. Matthai.—Supposing we fixed the scale of protection with reference to your costs at the end of 7 years then for the rest of the period they would be getting more out of that than you.

Mr. Peterson.—Yes.

Dr. Matthai.—Leaving the margin of safety don't you think they would be in a better position?

Mr. Peterson.—I doubt very much if any new steel works coming after 7 years will get more than we are going to get ultimately. The competition between the two plants will force the costs down.

President.—I think we have to adopt one of two alternatives in fixing the fair selling price. We must either fix it so high from the outset that it will cover contingencies of that kind or it must be so fixed that any new works will not be at a disadvantage as compared with you.

Mr. Peterson.—Yes.

Mr. Mathias.—I understand from what you said just now that however high we fix the protective duty, the competition from your works would still be such that the new works would be unable to establish itself.

Mr. Peterson.—Why not. There is a market. It simply means that we would be making as much profit as they would.

Mr. Mathias.—If there is a market for it.

Mr. Peterson.—There will be a market for it.

Dr. Matthai.—What you say about internal competition is perfectly all right, but if we are providing protection for a limited period, say, 15 years, during the first 7 years I don't think the competition could be very effective.

Mr. Peterson.—It would begin to be effective before that.

Mr. Mathias.—It would only be effective if the production exceeds the demand in the country.

Mr. Peterson.—That is not likely to happen. One very good instance of the effect of competition is the increased efficiency of the Indian blast furnaces. The existence of these two new blast furnaces which belong to the Indian Iron and Steel Company and the two big blast furnaces of ours has led to the continual reduction in our cost of pig iron.

Dr. Matthai.—There is this difference with regard to your blast furnaces. In the case of pig iron the period within which the competition would be effective is a much shorter period than in the case of a whole steel plant.

President.—As regards the market for steel generally, we have not worked out the figures as to what the total demand of steel is and how it is likely to be increased. I think one thing is certain that the new works will have to be more or less in close proximity to yours.

Mr. Peterson.—Somewhere in the coalfield area they must be.

President.—The position is this that if the entire Indian demand is to be supplied by Indian steel, then the scheme must provide for a price which would enable the Steel Works situated in this particular area to penetrate those markets which are so far away as Bombay, Karachi or Burma. Karachi, of course, is an extreme instance. We shall deal with this point when we come to your realised price. You have got some advantage in the upcountry market.

Mr. Peterson.—Yes.

President.—There won't be room for your Company as well as for another competitor to the same extent in this market where Indian steel has an advantage over foreign steel.

Mr. Peterson.—They will have to divide it between themselves. It really comes to the question of the cost of distribution.

President.—So that the result may be this. The advantage that you have at present in this market may be set off against the disadvantage that you may have to meet in other markets, is that correct?

Mr. Peterson.—Yes.

President.—Take a typical instance. I think that your principal upcountry market is practically the Ganges valley.

Mr. Peterson.—Yes, we go as far as Lahore.

Dr. Matthai.—That is practically the Punjab, the United Provinces and Bengal.

Mr. Peterson.—Yes.

President.—You have taken possession of that. The other has to compete with you in that market and you have to compete against him in the remaining markets.

Mr. Peterson.—It would be better if you examine our Sales Manager on this point because he has a very intimate knowledge of the actual imports. About 12 months ago, we stopped the import of the bar mill products. Now it has commenced again and it is very considerable. There is a good deal of imported steel coming in.

President.—As regards general finance, apart from the question of raising capital, I think that in your case it was rather unfortunate that it was not as satisfactory as it might have been

Mr. Peterson.—Do you mean that we did not raise sufficient capital or are you talking of the need of finance?

President.—Both. We want to be quite sure that anybody else who comes in starts under better conditions than you did.

Mr. Peterson.—If you are referring to the deficient finance that of course is due to the increase in estimate resulting from the boom after the war.

President.—You had your reserves which came to your rescue.

Mr. Peterson.—We were still short of money.

President.—The point is that even so you had not enough extra capital.

Mr. Peterson.—No.

President.—We took Rs. 12 crores as the capital required by a new company. That did not take into account the working capital. Don't you think that for a new works it would be safer to depend for this upon its initial capital?

Mr. Peterson.—It would be much safer to provide for its working capital as well as other capital.

President.—In that case we shall have to take away the working capital and add it to the capital itself.

Mr. Peterson.—That is right.

President.—That has been one of your difficulties.

Mr. Peterson.—The actual deficit to meet the fixed capital expenditure was met by short term loans which have been got rid of.

Dr. Matthai.—Can you tell me how much of your fixed capital expenditure has been met out of short term loans?

Mr. Peterson.—You made an estimate yourselves in the 1st Report.

Dr. Matthai.—We made a casual reference to it last year, but we had nothing very definite to go upon. I don't want anything very accurate. I only want to get a general idea.

Mr. Peterson.—It is somewhere in the report I know.

Dr. Matthai.—Will you please look at page 71 of our last year's Report?

Mr. Peterson.—That is the one I am thinking of. You have taken interest charges at Rs. 33 lakhs there.

Dr. Matthai.—I don't know whether it is based on any definite data?

Mr. Peterson.—If you want the actual capital expenditure as written down by the Tariff Board, *i.e.*, Rs. 15 crores for capital and Rs. 2 crores for collieries, you will find it on page 45 of the original report of the Tariff Board.

Dr. Matthai.—When you speak of short term loans, I take it that you mean loans for a period under one year.

Mr. Peterson.—Longer than that. It might extend to 2 or 3 years.

Dr. Matthai.—It is an uncertain factor.

Mr. Peterson.—It is very uncertain.

Dr. Matthai.—I hope that it would not be adopted so far as this industry is concerned.

Mr. Peterson.—We have got rid of all short term loans except those secured by debentures.

President.—The debenture part of the thing is not satisfactory. You have got Rs. 6 crores of debentures. I don't say that it is unsafe for the debenture holders because it is not my business. Your block value is Rs. 15 crores of which Rs. 6 crores is debentures.

Mr. Peterson.—Our block value is Rs. 15 crores. It has been mortgaged for Rs. 6 crores.

President.—If you have to borrow any money, you have very little margin left. On the same security you cannot get second debentures.

Mr. Peterson.—At present we cannot issue second debentures but we may be able to issue them later.

President.—As regards the question of the average rate of return, if you have debentures as one third of the capital, it may be possible for you to raise capital at a cheaper rate of interest, but on the other hand if that method is adopted, you have no reserve left for further borrowing.

Mr. Peterson.—There would be no reserve for contingencies. As a matter of fact in our case we had offers for second debentures but we did not like the terms.

President.—Of course if you are prepared to pay a high rate of interest, you can raise second debentures.

Mr. Peterson.—It is not only a question of interest but they also want a share of the profits.

President.—According to Statement No. 56, the arrears of dividends up to 1925-26 on second preference shares amounted to Rs. 208 lakhs and the arrears of dividends on first preference shares Rs. 9 lakhs, the total being Rs. 217 lakhs.

Mr. Peterson.—Yes.

President.—They will be a first charge after the debentures.

Mr. Peterson.—A charge on the profit and not on the company.

President.—If your profits come to Rs. 120 lakhs, you have got to pay out of that your debenture holders. That takes away Rs. 48 lakhs, leaving a balance of only Rs. 72 lakhs. Out of this Rs. 52½ lakhs has to be paid to the second preference shareholders and Rs. 4½ lakhs to the first preference share holders. If you are to fund the arrears of preference interest, it will take 10 years or so to pay off. The ordinary share holders will get nothing for 10 years. If it was not a question of making any provision for another industry—

Mr. Peterson.—Another industry would probably avoid this capitalisation.

President.—We have got to see first of all that this industry is put on a sound footing.

Mr. Peterson.—On this particular question of the arrears of dividends, I think that I should say that within a fortnight the Board of Directors will probably issue a statement in Bombay regarding them. Could we postpone this portion of the examination till that statement is issued? It will be issued by the end of July.

President.—I don't want to go into it then. Supposing we were not making any recommendations except with reference to your works, and supposing we were strictly to follow the principle of discriminating protection which means the smallest burden on the country, why should we allow 10 per cent. on ordinary shares when we find that ordinary shareholders are practically wiped out?

Mr. Peterson.—Because you proceed presumably on the capital value of the assets and not on the share capital of the company.

President.—You have had to write down Rs. 4 or Rs. 5 crores. Equitably speaking, the other shareholders must have a share. Otherwise the whole of it is thrown on the ordinary shareholders.

Mr. Peterson.—That is a bargain made by the ordinary shareholders themselves.

President.—Supposing protection is given, the preference shareholders will get 7½ per cent. This is a very good rate of interest. If they get that, they will have done very well. Why should we allow in addition anything for the ordinary shareholders who will get nothing for 10 years?

Mr. Peterson.—You are looking at it from a different point of view. Let us suppose that the company consists of nothing but ordinary shareholders.

President.—Take the case of preference shareholders.

Mr. Peterson.—Take the case of one company which contains nothing but ordinary shareholders, and the other which is the existing company. You have got to decide what return the first company should get on the present value of the money spent. I don't see that it matters how that money is distributed among various people.

President.—If we make our recommendations with regard to another company, that question does not arise. But supposing the recommendation is confined to you?

Mr. Peterson.—I don't really see that it does arise.

President.—It does. You ignore the ordinary shareholders.

Mr. Peterson.—You cannot ignore the assets in the balance sheet.

President.—Supposing you make more profits, until the preference shareholders get their arrears the ordinary shareholders get nothing. That is what it amounts to.

Mr. Peterson.—The total amount of the second preference shares is Rs. 7 crores. You won't find that that tallies with the assets in the balance sheet. It is about half. You have got Rs. 17 crores on this side. On the other side you have got second preference shares amounting to Rs. 7 crores. Even if you add the debentures, you have only Rs. 13 crores as against Rs. 17 crores. Still Rs. 4 crores is left.

President.—Where?

Mr. Peterson.—You originally valued the block at Rs. 15 crores and you added Rs. 2 crores for collieries. Against that you have got—

	Rs.
1st preference shares	75 lakhs.
2nd preference shares	700 ,,
and	
Debentures	600 ,,

all of which have not been issued; so that you have not got more than Rs. 13 crores on the other side. There is a balance of Rs. 4 crores which must be represented by some capital.

Mr. Peterson.—As a matter of fact this point was raised in the debates, when they cut down the bounty from Rs. 18 to Rs. 12. This is what Sir Charles Innes said "When I introduced the Steel Protection Bill in May 1924 I made an appeal to the industry to co-operate with the Government and the Legislature. When I proposed bounties in January last I made that same appeal and I feel that I ought to make that appeal again. I think the Chairman of the Board of Directors will bear me out when I say that hitherto there has been no response to that appeal and that is a feature in the position which worries me most. The House has to remember that owing to the way in which the capital of this company is arranged, about two-thirds of the share capital takes the form of second preference shares the interest on which is cumulative. For the past three years I think I am correct in saying that arrears of that interest amounting to about Rs. 50 lakhs a year have been accumulative. There is a load of debt amounting to Rs. 1¾ crores on that score alone round the neck of the company, and I feel, Sir, that we in this House ought to send a message to-day to the Tata Iron and Steel Company that we expect them to take this matter in hand and that we expect them to co-operate with us in putting their industry upon a sound and healthy basis." In the same debate (Assembly Debates, dated 15th September 1925, Vol. VI) Sir Basil Blackett said "The financial position of the Tata Iron and Steel Company is a somewhat difficult one owing to the fact that, as pointed out by the Tariff Board in their original report, there is a considerable amount of capital which cannot be expected to earn a return. The Government's view has been quite clearly stated to the Company, that this ought to be dealt with. It is not for the Government to lay down the exact terms on which it should be dealt with, still less is it for the Government and a Committee of this House to consider what terms Tata's directors should suggest to their shareholders for dealing with this difficult situation. But I do think that it is right that the Government and this House should make it clear to the Tata Iron and Steel Company that their policy is to enable the company to earn a reasonable return on the capital which is really engaged in turning out steel and it is not the policy of the Government or of this House to put a company in a position out of bounties, voted at the expense of the taxpayer, to pay the arrears of dividends on second preference shares." In response to this we wrote to the Government of India and we understand that the Government will accept the scheme we have put forward.

President.—Connected with this question of the finance is this question of a reserve. In every scheme that we have so far put forward, we have calculat-

ed that this amount of money would be earned and that it would suffce for all purposes. Neither has happened so far.

Mr. Peterson.—The amount of money has not been earned.

President.—In a scheme like this what proposal can we make?

Mr. Peterson.—You mean as to the reserves which the company ought to hold?

President.—If this scheme works perfectly you will get your depreciation and return on your capital, and no more.

Mr. Peterson.—There is a large reserve in the balance sheet at present. There are at present large reserves on which the company can borrow.

President.—I am talking of a new company coming in. What is the source from which to accumulate reserves which would enable them to tide over temporary difficulties?

Mr. Peterson.—There is not anything really, but I think on the assumption that a company earns 10 per cent. on the money invested, they would not probably pay the whole 10 per cent. to the shareholders. A part of it will go as reserve.

President.—That is the point I suppose. When you earn 10 per cent. you carry, say, 2 per cent. to your reserve.

Mr. Peterson.—Yes, 2 or 2½ as the case may be.

President.—So that the return of 10 per cent. may include a reserve against contingencies?

Mr. Peterson.—That is a reserve against contingencies really. It need not be accurate; it may be 1 per cent. in one year and 3 per cent. in another year and so on.

Measure of Protection.

President.—Now we will deal with the general question of the measure of protection. I think as far as the measure of protection goes we have laid down a definite principle that it is the difference between your fair selling price fixed by us and the price at which the foreign steel is likely to be imported. For that reason perhaps it would be necessary for us to go into the import price and then we have to make some forecasts as to the future. There has been a continuous fall in the price of foreign steel.

Mr. Peterson.—Since the first report there has been a drop in price.

President.—Except that for a short period there was a rise?

Mr. Peterson.—Yes, owing to the rise in freights, but that was a very short rise and prices soon fell again.

President.—Speaking generally are we to assume that this position is going to continue or are we to assume that it is going to stop?

Mr. Peterson.—It is extremely difficult to say. In giving evidence about a year ago I said that the prices were so low that they could not go any lower.

President.—You said the same thing at the time of the second report!

Dr. Matthai.—We must devise something by which we can safeguard ourselves against that. With regard to this movement of price, what has been happening is really this. The whole thing turns on the Continental exchange.

Mr. Peterson.—Practically.

Dr. Matthai.—That is to say when the Continental export prices go down, British prices in competition have got to go down.

Mr. Peterson.—Yes.

Dr. Matthai.—But for exchange things have reached bottom.

Mr. Peterson.—I don't know whether you can follow that completely.

Dr. Matthai.—What I am trying to get at is this. On three occasions we enquired into the question and each time we were told "we have reached bottom." The only circumstance that has varied each time is the Continen-

tal exchange and when the Continental exchange depreciates your bottom seems to give way.

Mr. Peterson.—There is a deeper fact than that.

President.—There are two other factors. First of all so far as the United Kingdom is concerned, other things being equal perhaps it cannot afford to sell steel at a lower price than it has been selling now.

Mr. Peterson.—That seems to be proved. They can't sell at that price for long.

President.—That doesn't mean that prices will not go down, if the industry is re-organised. That has been operating in Belgium, Germany and the United Kingdom to a very large extent. Simultaneously with the fluctuations in the exchange they have been able to bring down their actual costs of production. That is a factor which has to be taken into account. Supposing we eliminate the factor of exchange for the time being it does not necessarily follow you will not reach a lower stage.

Dr. Matthai.—Is that statement correct with regard to the recent situation? The whole point seems to me to be this that in France and in Belgium along with the depreciated exchanges, there has also been a steady rise in costs.

President.—It is stated definitely by the British Trade Commissioner in Belgium that the cost of production has been going down steadily and he has given many reasons, for instance, modern plant, labour serving appliances, handling machinery, reduction in the coal consumption and then he says that they have constructed very large electric works which supply electric power at a very cheap rate.

Dr. Matthai.—At the time the Tariff Board conducted its enquiry, it is perfectly true that in countries like France and Belgium operating costs were going down on account of imported plant, but if you take the short period between our last enquiry and this, the main fact has been the depreciating exchange which has been accompanied by a perceptible rise in costs.

Mr. Peterson.—I can't tell you. The fall in price is mainly due to the exchange.

President.—We are not referring to the fall in price. We are referring to the fall in costs.

Mr. Peterson.—There has been a great improvement in practice.

President.—There is one other factor which has now been coming in steadily and which may have the contrary effect of raising the price and that is the formation of these big trusts.

Mr. Peterson.—Yes, big combines.

President.—They are trying as far as I can see to bring in Belgium and Luxemburg. We may be able to deal with the question of exchange in some way, but as regards these factors in arriving at the c.i.f. price—

Mr. Peterson.—I don't see how they can bring down their prices very much lower than they have.

Dr. Matthai.—Do you mean as far as England is concerned?

Mr. Peterson.—No, all countries.

President.—There is no question that the productive capacity is perhaps 50 per cent. more.

Mr. Peterson.—More than that.

President.—The whole of the steel industry has suffered a great loss. That loss has been written off, because they had tremendous reserves. That brings down their overhead, and reduces their total selling price.

Mr. Peterson.—It is very difficult to say how the price of steel to this country is below pre-war whereas we know that the price of everything else which they use in the manufacture of steel is nowhere near pre-war.

Dr. Matthai.—It is not an accurate statement. So far as England is concerned, the general wholesale index number is 150 roughly and steel prices 120 compared with pre-war.

Mr. Peterson.—I am talking of prices in this country. Rails do not come in here at the prices which people in England get.

President.—As far as prices are concerned the position seems to be this that so far as British and American prices go—we will take the last two years—there has not been the same perceptible decline except in sympathy with the Continental prices.

Mr. Peterson.—I don't think there would have been any decline, but for the decline in the Continental prices.

President.—Therefore it may be safer to assume that so far as these two countries are concerned, the prices have a tendency more or less to stabilise.

Mr. Peterson.—The American price seems high. Compared with the rest of the world, they might fall.

President.—At present the British industry is said to be selling at a loss.

Mr. Peterson.—I believe so. It has been stated frequently.

President.—So that even if there is a reduction in their cost of production they may be able to make good the loss that they may be actually incurring just now, but they may not be able to reduce their prices below what they have reached inspite of the reduction in the cost of production.

Mr. Peterson.—I don't think they can.

Dr. Matthai.—Supposing we say they probably cannot go below pre-war prices.

Mr. Peterson.—They are below now.

Dr. Matthai.—I am speaking of British prices. Steel prices roughly stand at Rs. 120 per ton compared with pre-war, *i.e.*, the internal prices in England.

Mr. Peterson.—I am talking of the export price.

Dr. Matthai.—I am assuming that there is a certain relation between internal price and the export price.

President.—The drop in the Continental price is not keeping pace with the rise in exchange.

Mr. Peterson.—It lags behind always.

President.—As a matter of principle may we assume more or less that there may not be much fluctuation so far as British prices are concerned?

Mr. Peterson.—I don't see how they can fall.

President.—That is to say they could not afford to sell below these prices for any length of time.

Mr. Peterson.—I don't think it would continue. The pre-war price of rails was fixed at $28 from 1901 onwards. The same was the case in England.

President.—The rise is from $28 to $43.

Mr. Peterson.—Yes.

President.—As regards the future of course it would not be easy for us to make any conjectures except this that there may be a little fluctuation.

Mr. Peterson.—My latest information from England is that the price obtained by English makers for English rails is £7-5-0 at present. From the same source we understand that the prices for rails supplied to the Madras and Southern Mahratta Railway and Assam-Bengal Railway is £6-5-0 to £6-15-0.

President.—Perhaps they are Continental rails.

Mr. Peterson.—It is very difficult for us to obtain any information. The information that we have obtained may not be correct.

Dr. Matthai.—As far as galvanized sheet is concerned, it is a class apart.

Mr. Peterson.—Yes.

Dr. Matthai.—You don't have the same amount of fluctuations.

Mr. Peterson.—No, but the price is coming down steadily.

Dr. Matthai.—Not in the same proportion?

Mr. Peterson.—No. Another point that arises in this question is the price of spelter which enters into it. It is not a pure steel product. Moreover it is not affected by Continental competition. I may explain that Continental competition will arise in the case of sheet bars from which sheets are manufactured. But it won't affect the corrugated or plain galvanized sheets which are entirely made in Wales.

President.—This is as regard f.o.b. price. To get to c.i.f. may be assumed that the freight is more or less at the pre-war level?

Mr. Peterson.—There has been some little rise from what it was 15 months ago. At present the Continental freight is 16*s.* 6*d.* and the British freight is 22 shillings.

Dr. Matthai.—By the Continental freight, do you mean the freight from Antwerp?

Mr. Peterson.—Yes.

President.—16*s.* 6*d.* is for freight and insurance?

Mr. Peterson.—Yes.

President.—I find that in one of the letters which we have received from the Railways, the freight from the British port, Middlesborough, is given as 16 shillings.

Mr. Peterson.—They might have got a special rate of freight—Government preferential freight. That is not the ordinary commercial freight.

President.—What would be the commercial freight?

Mr. Peterson.—22*s.* 6*d.*

President.—I think that during our last enquiry the freight from the Continent was 13 shillings.

Mr. Peterson.—It went up to 16*s.* 6*d.* about 15 months ago.

President.—I think that we took more or less 23 shillings for freight from a British port and about 15 shillings from the Continent.

Mr. Peterson.—Yes.

President.—As regards insurance, it is very little.

Mr. Peterson.—Quite small.

President.—As regards port dues and landing charges, I think that we made a distinction between the Continental material and the British material. In the case of Continental steel we took as follows:—

	Rs.	A.	P.
Port dues	2	8	0
Handling and cartage to godown . . .	5	0	0
Minimum allowance for profit or importer's commission	2	8	0
TOTAL .	10	0	0

In the case of British steel we said "But the British steel is largely imported by the Calcutta engineering firms who can transport steel by water from the docks to their works for about Rs. 2-8-0 a ton. Moreover they themselves purchase a considerable amount of Jamshedpur steel, and clearly they would not, in any circumstances, pay more than the actual cost of British steel. No allowance can therefore be made for profit, and Rs. 5 a ton is sufficient to cover the actual charges incurred." This makes a difference of Rs. 5 per ton.

Mr. Peterson.—Yes. But I don't think that the argument about profit is correct because the firm would probably calculate on that. It cannot expect to import for nothing because it is importing on its own account. It would naturally be in accordance with commercial practice to charge the profit. Therefore I don't think that Rs. 2-8-0 is correct. I don't think that the point was raised at that time.

President.—If instead of doing that we took the average, would it be reasonable?

Mr. Peterson.—The fairest thing is to take Rs. 2-8-0 for port dues and landing charges and Rs. 5 for handling and cartage to godown, and the importers' profits.

President.—The Continental importer says he must have his commission.

Mr. Peterson.—It is service rendered for which he charges. He must be doing something in order to get it.

President.—That only applies to the c.i.f. price.

Mr. Peterson.—Yes. Then you will have to compare the charges in Bombay which will be different from those in Calcutta. I think that they will be higher.

President.—I think that the argument that it does not cost much to the Calcutta importer who can take his steel by river to his works would not apply to Bombay.

Mr. Peterson.—No, he will have to take it by cart.

President.—The best thing is to take the weighted average of British and Continental steel.

Mr. Peterson.—That is the fairest thing to do—average of the water and land transport.

President.—The difference of Rs. 5 is a substantial difference.

Mr. Peterson.—I am not sure that the importers' commission is not too high. These people work on a small margin. A great many of them are prepared to sacrifice a larger proportion of their commission.

President.—In times of depression.

Mr. Peterson.—That is what I mean. The point here is that every addition of this kind increases the import price. The average importer would be quite pleased to import steel for one rupee a ton instead of Rs. 2-8-0. We find it very difficult to get our large dealers to take the margin of profit which we think they ought to take. They are always willing to give it up in order to get customers. We find that our dealers are selling at the same price as we are selling them.

President.—We must take the normal conditions.

Mr. Peterson.—Rs. 2-8-0 is not the normal condition.

Dr. Matthai.—What would you put it at?

Mr. Peterson.—One rupee a ton.

President.—Then, I think that we will have to devise some method of calculating this c.i.f. landed price. We must consider whether this difference of Rs. 5 is really required.

Mr. Peterson.—I don't think it is.

President.—Then, another factor which we have got to take into account is that having got this c.i.f. landed price, we have to make some adjustment again, your realised prices ordinarily speaking are slightly higher than the c.i.f. landed price?

Mr. Peterson.—Slightly.

President.—Taking the c.i.f. price, we have added in some cases two or three rupees a ton. For instance, in upcountry markets where you sell one-third of your products you get Rs. 20 a ton higher.

Mr. Peterson.—That is so. You have gone into all that in the report. The only thing is to give you a statement.

President.—You have got three or four different rates. Take for instance heavy structurals (Statement No. 99). From Government you got Rs. 161·70, from railways Rs. 152·13, from engineering firms Rs. 137·14, from dealers Rs. 142·47, miscellaneous Rs. 137·98 and the average is 138·80. What I want are your realized prices from April 1924 to 31st March 1925 and then from April 1925 to March 1926.

Mr. Peterson.—You want the prices for both years.

President.—Yes. You must be ready with it before the next examination begins.*

Mr. Peterson.—You want the realized prices? Last time we mixed them up with the adjusted prices.

President.—Yes. The point now arises is whether we should really make these adjustments with reference to a new works because, as I was telling you this morning, it may have to compete in these other and distant markets where the freight advantage gained in the nearer markets will be lost. That is the point we have to consider now. It may be that you have got this advantage now but it does not necessarily follow that you will be able to maintain that advantage when you have to compete in the distant markets. Immediately it may have the result of giving you a higher price. What would you suggest with regard to that?

Mr. Peterson.—I should not regard that as a calamity. My view of protection is that it should not aim at giving a minimum of profit. I would keep the margin pretty wide.

President.—One way of providing that margin would be to make minor adjustments.

Mr. Peterson.—I think we have got to follow the same lines as America. They don't try and work it down to the lowest dollar. They take a very liberal margin.

Dr. Matthai.—They don't discriminate there.

President.—It makes a difference of Rs. 5 a ton in some sections, largely structurals.

Mr. Peterson.—Bars chiefly and structurals. Bar mill product is what is mainly affected.

President.—Would it be possible for you to give us the average price of this class of steel we have taken as typical over a period of two years?

Mr. Peterson.—Average of two years realized price for the merchant mill and rail mill products?

President.—You will have to exclude the bounty in both cases.

Mr. Peterson.—We shall show the bounty separately. All bars rolled in the merchant mill.

President.—I want bars and structurals.*

Mr. Peterson.—Light structurals?

President.—No, rails.

Dr. Matthai.—The merchant mill really caters for the bazar, does it not?

Mr. Peterson.—Yes.

President.—In this connection you might give us the total bounty you got in each year.

Mr. Peterson.—You mean the total amount of bounties paid?*

President.—You will show the average realized price; in that place you show the total amount of bounty.

Mr. Peterson.—Yes.*

President.—What about the subsequent months?

Mr. Peterson.—We will send you that month by month if you want it.

President.—What I want is that this must be brought into the same form as Statement 99 in the statement volume of your representation and that the subsequent months must also be in the same form.

Mr. Peterson.—What you want is the average realized price for rails and bars.

President.—Yes, leaving the plates separate as they are.

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* Supplementary Statement No. 19.

Mr. Peterson.—You don't want us to alter the form at all?

President.—What we have to consider is whether we cannot find a simpler method of arriving at your realized price without having to make these adjustments from time to time as regards upcountry prices and so on. Then when we have ascertained what these c.i.f. landed prices are, we shall consider whether any adjustments are required. We have got to determine how the protection ought to be fixed.

Mr. Peterson.—Yes.

President.—First of all we find the sterling price; after having got that we have to see what the difference is between that price and your selling price. First of all you compete against British steel. In our first enquiry we found that was what was really mattered.

Mr. Peterson.—That is so.

President.—We did not attach so much importance to the Continental prices in our first enquiry. Now we find that it is really the Continental price that determines the foreign c.i.f. price. There has been a greater tendency in the Continental price to fluctuate than in the British price and what really has made the scheme somewhat ineffective is that factor.

Mr. Peterson.—Yes.

President.—Do you think that we can deal with the Continental price on a separate footing? I will put it to you this way. Supposing we estimate your fair selling price at Rs. 120 and the British c.i.f. landed price at Rs. 100. We first of all put Rs. 20 on all steel. Then we find that the other steel that competes against you is the Continental steel which comes in at Rs. 80. Then, logically it comes to this that the Continental steel in order to equalize its price with Tatas has got to bear a duty of Rs. 40 per ton.

Mr. Peterson.—That would be the logical result.

President.—Can it be done?

Mr. Peterson.—I don't know. Probably what would happen is that they would ship from Antwerp to a British port and from there to India.

President.—That point was considered by us in our first supplementary scheme. At that time the gap between the British price and the Continental price was very big and what you say was possible. But the gap is about £1 or £1¼ now. In addition you must remember that they have got to ship the stuff to Great Britain, land and re-ship it. Further, the freight from Great Britain to India is higher than the freight from the Continent. All this will leave very little margin.

Mr. Peterson.—The simplest thing would be to ignore the gap and fix the protection on the lower price.

President.—In that case when the prices improve we shall have to give you Rs. 40 a ton even though you can do with Rs. 20 a ton if the Continental steel does not compete at all. If the scheme is such that it makes it impossible for Continental steel to come in, then the protection that you need is Rs. 20. Why should you have Rs. 40 when you can do with Rs. 20?

Mr. Peterson.—I don't see how otherwise you are proposing to discriminate. What you are really doing there is giving a preferential duty on British steel.

President.—Let us call this Rs. 20 an off-setting duty.

Mr. Peterson.—If you work it on the depreciated exchange you can do it.

President.—We say Rs. 20 on all steel but as the Continental exchange is depreciated it should bear an extra amount of duty. The point we have got to consider is whether such a scheme would come into conflict with any commercial treaties. I think, so far as France is concerned, we found last time that we could not discriminate. If you cannot exclude France you may as well leave Germany and Belgium alone. Under our scheme whatever the cause of the fall in price was, an off-setting duty was to be imposed. If off-setting duties could have been imposed you could have done without bounties. The

bounties became necessary because there was importation of Continental steel on a larger scale by reason of the depreciated exchanges.

Mr. Peterson.—That is correct.

President.—There is one other thing about this. The chances of protection remaining more or less stable are better in this scheme than in the other, because when an alteration is required you simply alter the off-setting duty. You may remove it, increase it or decrease it just as you like. Do you think it is a feasible scheme?

Mr. Peterson.—I would not like to express my opinion without thinking it out, but there seems to be great difficulty in distinguishing between the origin of the various kinds of steel entering the country.

Mr. Mathias.—What would be the freight on shipping to England from the Continent and then re-shipping to India?

Mr. Peterson.—To take a steamer into some English port and re-ship from England?

President.—That would mean something.

Mr. Peterson.—If you were going to make a difference of Rs. 20, you would be offering a very heavy inducement to fraud.

President.—If that happened often there is nothing to prevent us from putting on an off-setting duty on British steel.

Mr. Peterson.—I quite agree that if there is a clause that steel which enters this country at a lower price than the steel from any other source, should pay a higher duty—if a method can be fixed like that—it would be an advantage.

President.—Your point is that it may be re-exported. If that is done on a large scale, it would be found out.

Mr. Peterson.—It might conceivably establish a system by which semi-finished steel was exported to England to be finished and sent out to India. That happened I believe in Australia.

President.—There the position is different.

Mr. Peterson.—As a matter of fact 90 per cent of the material coming in was not really British in origin.

President.—But there the underlying idea is different. There they say "we are making a sacrifice of revenue in order that Great Britain should benefit." Our object is not that. Our object is to safeguard ourselves rather than to benefit Great Britain.

Mr. Peterson.—It appears to me that if the importers can manage to give in the colour of British manufacture, he will bring it under a duty of Rs. 20 a ton. Provided that can be safeguarded against, there is no objection. In fact I think it would be a very good thing if you could do it.

President.—Anyhow it is worth trying.

Mr. Peterson.—Yes, it is.

President.—Even if there is subsequent enquiry for fixing the off-setting duty it will not affect the substantive amount of protection you get.

Mr. Peterson.—No.

President.—It would only affect this off-setting duty.

Mr. Peterson.—If I may say so, I would like to couple with that a provision against the lower export price from Great Britain as compared with their own internal price.

President.—That we take into account in fixing the original amount of duty.

Mr. Peterson.—You will take that into account in any case.

President.—Supposing in fixing this duty of Rs. 20, we fix the basic price at Rs. 100. We then levy Rs. 10 on all steel, and Rs. 10 off-setting duty against Great Britain and Rs. 30 off-setting duty against Continental steel. It can be done in that way.

Mr. Peterson.—I think I made that suggestion in our first representation.

Dr. Matthai.—Any fall in price whether it is due to exchange or simply to a system of dumping will bring these off-setting duties into operation.

President.—And leave the amount of protection that you get stable.

Mr. Peterson.—You select one particular country where exchange is stable, fix the rate of exchange as against that country and use the off-setting duty against any country which falls below the standard.

Mr. Mathias.—How do you ascertain the price?

Mr. Peterson.—By the actual invoices.

Dr. Matthai.—It is practically the provision in the Steel Industry Act.

Mr. Peterson.—I made a proposal to you at the time of the 1st Report and it was not accepted. If you look at page 119, Volume I of the Steel evidence, you will find that I really made the same proposal there. I based it on the level of the depreciated exchange.

President.—We did not approve of the automatic raising of duties.

Mr. Peterson.—How do you propose to impose the off-setting duty?

President.—Just now Great Britain can supply any kind of steel that the Continent can supply, is not that so?

Mr. Peterson.—Yes.

President.—In order to avoid these frequent enquiries the off-setting duty on Continental steel may be fixed at a rate which would prevent it coming in but would not prevent the other steel coming in.

Mr. Peterson.—Dr. Matthai raised the question on these off-setting duties "when the fall in prices occur how are they going to come into operation." We suggest that they should come into operation automatically.

President.—Automatically in this sense that either the Customs authorities or somebody would make enquiries.

Mr. Peterson.—We suggest that the Tariff Board should do it.

Dr. Matthai.—That means a supplementary enquiry.

Mr. Peterson.—No—simply a statement of actual prices from the invoices and if it shows that prices are below a certain figure, the off-setting duties automatically come into effect.

President.—So long as the duty is so fixed that there is no violent change at any time why should you make these alterations automatically? When it does not affect the Indian industry at all for the time being why should we make the alterations because the price has dropped?

Mr. Peterson.—The proposal we made there was that if the drop was below a substantial amount, *i.e.*, 25 per cent. the off-setting duties should come into operation.

President.—If it substantially dropped below Rs. 120.

Mr. Peterson.—As soon as the drop amounted to Rs. 5 the off-setting duty should come into operation.

President.—If we prescribe British Standard Specifications, that would raise the price of Continental steel by about 10 to 15 shillings a ton.

Mr. Peterson.—That would be a good thing for the country.

President.—Then there is the question of transport from the Continental port and landing and other charges at the British port. Then, there is the difference in freight between the Continental port and the British port which is about 6 or 7 shillings per ton. Then, there is the fraud.

Mr. Peterson.—There would not be any fraud. I don't mean that a man will simply ship his goods to London and re-ship them as from London. But what I say is that he will ship ingots or billets to have them rolled in England.

President.—That does not matter. We are not giving Imperial Preference. We are not concerned with how much benefit British labour or British indus-

try derives. British manufacturers use some Continental billets even to-day. But their prices are generally higher. How would the position be different?

Mr. Peterson.—I don't know whether it will happen or not, but it may.

President.—Australia said that its object was that the British industry must benefit by this preference by using British materials and British workmanship. We are not concerned with that.

Mr. Peterson.—I don't think that the difficulty is really likely to arise.

President.—A difference in the duty of Rs. 20 or so might suffice.

Mr. Peterson.—I think that it is a reasonable proposal. As I say it is one that I made myself, in another form.

President.—We are simply discussing a possible scheme. We cannot get out of these frequent fluctuations without it.

Mr. Peterson.—You cannot.

President.—If we had followed some such system, the country could have saved the money that it paid you by reason of the fluctuations in the exchange.

Mr. Peterson.—It would have paid it in another form.

President.—Would it be necessary to have the full amount of the difference between the British and Continental prices in the off-setting duty, or would a part do? Is ordinary Continental steel inferior to ordinary British steel?

Mr. Peterson.—The only thing that India requires is cheap steel or low priced steel. Therefore that question of inferiority does not arise.

President.—Does that apply to bars?

Mr. Peterson.—To the bazar material. If they can buy it 8 annas cheaper, they don't care what the quality is.

Mr. Mathias.—For bazar purposes it is desirable that there should be a supply of cheap steel.

Mr. Peterson.—Yes, soft steel, but some very bad steel is coming in.

President.—Do you think that it is really detrimental to the interests of the country if all the Continental steel had to be according to the British Standard Specifications.

Mr. Peterson.—They must have a certain amount of soft steel but there has been some very bad steel coming in.

President.—As regards rails, there is one point and that is that on principle there may be objection to raising the price of rails or any railway material too high. You are asking for a duty of Rs. 40 a ton, which you claim will secure you a fair selling price. Supposing we proposed a duty which would give you that price and at the same time we provided that you should supply rails at so much above your works costs . . . .

Mr. Peterson.—We would have no objection to that, provided we got all the orders.

President.—The safeguard is in the duty.

Mr. Peterson.—We would accept a fixed price.

President.—Would there be any administrative difficulty in that?

Mr. Peterson.—I don't think so. We will make a formal offer to that effect, if need be.

President.—The only thing that is liable to vary is the works costs and the Railways may say that they must get the benefit of a reduction.

Mr. Peterson.—We will give them the benefit of that reduction automatically.

Mr. Mathias.—Would it require some sort of enquiry?

Mr. Peterson.—It is not worth our while to conceal our works costs from anybody.

President.—It may be possible that you get a stated price but at the end of the year there might be an adjustment.

Mr. Peterson.—There might be.

President.—Would there be any difficulty in that?

Mr. Peterson.—No. At present when the Railways buy rails from us, they hold back 10 per cent. of the bill. It is probable that the works costs would not drop more than 10 per cent.

President.—That would practically affect a third of your output.

Mr. Peterson.—Ultimately it would affect a third of the total production.

President.—That goes out if some such proposal is made.

Mr. Peterson.—Yes, on a system of that kind.

President.—There is one other thing that may require some special provision and that is sheets. We really have not got your works costs for sheets.

Mr. Peterson.—There are no final costs yet.

President.—In a case of that kind, would it be safe for us to fix the protection for any length of time?

Mr. Peterson.—We have given you a cost which we expect to reach and we have every expectation of reaching that. So far as sheets are concerned, we have to make a guess at the fixed costs.

President.—Up to now our recommendations, so far as black sheets are concerned, have gone wrong.

Mr. Peterson.—Yes. We gave you too sanguine an estimate of what we are going to do as regards costs and production.

President.—Do you think that so far as these are concerned a temporary measure may be proposed?

Mr. Peterson.—It might be subject to a further enquiry. The other thing is to take the average costs for the entire period and give protection.

President.—I confess that I don't really believe in that estimate because you have not got sufficient data to work on.

Mr. Peterson.—I think that we will get down to those costs and probably below.

President.—You will perhaps turn out 50,000 tons as against 280,000 tons of galvanized sheets in 1925-26 imported.

Mr. Peterson.—I think that the total import was 180,000 tons. It is not to be expected that we can really solve the difficulty in 5 years that other countries have had 40 or 50 years to solve. We have had only one year.

Mr. Mathias.—Can you differentiate the case of sheets from that of your other productions?

Mr. Peterson.—You cannot differentiate on a point of quality. The sheets are a case for bounty and not duty unless the revenue is required. The revenue may be required by Government for other purposes.

President.—The import is 280,000 tons as regards galvanized sheets alone.

Mr. Peterson.—It is obvious that the increased duty on galvanized sheets has not affected consumption. The imports have been steadily increasing.

President.—That is clearly a case where the domestic supply is a very small percentage of the country's demand.

Mr. Peterson.—Yes.

President.—For that reason, duty may not be advisable especially as we do not know what your costs are going to be. What I am suggesting is that it is a product which is produced in a small quantity. That is an additional reason why we must treat sheets on a different footing from the rest of your production?

Mr. Peterson.—Yes.

President.—As regards the scale of protection, there is one point to be considered. The measure of protection that you actually receive would depend considerably on the manner in which the market is kept intact for you. Take the case of fabricated steel for instance.

Mr. Peterson.—If you put a duty on our steel and not on fabricated steel you give us no market.

President.—That would apply to other subsidiary industries in the same way.

Mr. Peterson.—Yes.

President.—What I really want to know is whether by reason of the fact that fabricated steel and other subsidiary industries did not get the supplementary protection, your market was restricted.

Mr. Peterson.—What has actually happened is that they have been very seriously troubled in competing with the foreign manufacturers, especially British fabricated steel. We have in many cases actually lowered our prices. We have been compelled to lower our prices.

President.—Were your prices affected by the absence of supplementary protection?

Mr. Peterson.—Yes.

Dr. Matthai.—From that point of view, is there any difference between other subsidiary industries and the Tinplate industry?

Mr. Peterson.—In what particular way?

Dr. Matthai.—Supposing we gave no protection to the Tinplate industry or just enough protection to carry on.

Mr. Peterson.—That is a purely hypothetical case because protection does not help us there. We are under a contract with the Tinplate people.

(Continued on 24th June 1926.)

Differential Duties.

President.—I want to pursue the subject of differential duties a little further this morning. I tried to show yesterday what objects we must have in view in the scheme of protection; first, the industry must get the amount of protection intended under the scheme without frequent variations; secondly, from the point of view of the country, the country must get a sort of stabilization of steel prices without frequent variations; thirdly, the tax payer should not be made to pay more than is necessary and fourthly, the consumer must get his money's worth out of what he pays. The first three points we need not discuss again but as regards the last one I am not so sure as to what actually happens. Take British steel. There are certain industries in the country which prefer to use British steel—some of them have to use either British steel or steel made according to British Standard Specification. Isn't that so?

Mr. Peterson.—Yes.

President.—Now take our figures of yesterday, Rs. 80 for the Continental, Rs. 100 for the British and Rs. 120 for Tatas' steel. In a scheme of differential duties, a duty of Rs. 20 on British and Rs. 40 per ton on Continental will protect you against both. If you put a uniform duty what is required is a duty of Rs. 40 on all steel. Then the price of British steel comes to Rs. 140 a ton while the Continental steel remains at Rs. 120, so that when a man wants to use British or British Standard Specification steel he has got to pay Rs. 140, for which he would pay Rs. 20, under a scheme of differential duty.

Mr. Peterson.—He can get that from the Continent at an extra price of about 10 shillings a ton.

President.—Assuming that prices are regulated by economic laws, why should the Continent charge only 10 shillings more? The Continental manufacturer may say " I will take Rs. 135 per ton "—he will just undersell British steel.

Mr. Peterson.—He might do that.

President.—In that case the consumer has to pay Rs. 135 for steel which is worth only a little more than Rs. 125. That is one thing. Secondly, he has got to depend upon a guarantee that the steel is made according to British Standard Specification, or to be quite sure, he has got to have his steel inspected during the process of manufacture. This is not a very easy thing in the case of smaller consumers. So what happens? Either he pays more for his Continental steel than what it is worth or he pays Rs. 140 and buys his steel in Great Britain. That clearly is one of the results.

Mr. Peterson.—There isn't much demand for British Standard Specification steel except from the Government departments, railways and engineering firms.

President.—It is a considerable quantity.

Mr. Peterson.—But the bazar does not want British Standard steel. It wants the cheapest steel. And it wants mild steel.

President.—Let us take the bazar demand. So far as the bazar is concerned, you say the bazar wants to buy the cheapest steel. Is it certain that either in this country or in Great Britain this steel cannot be produced which can be sold at the same price as the Continental steel?

Mr. Peterson.—It would not lower the price at all. It would not cost us less.

President.—Not so far as you are concerned, but there is a lot of steel which is spoilt in the manufacture and which is inferior in quality, that must be happening in Great Britain too?

Mr. Peterson.—We are producing soft mild steel, so do the British makers.

President.—Then it is purely accidental; it has not been worth your while apparently to put upon the market this kind of steel.

Mr. Peterson.—We are making it. All our merchant mill products are mild steel.

President.—Then how is the bazar consumer affected?

Mr. Peterson.—I don't quite understand what the point is.

President.—The point is this. It has been stated that if you equalize the prices of British and Continental steel, that is to say, instead of putting a duty of Rs. 40 a ton, you put Rs. 20 on British and Rs. 40 on the Continental steel, then the bazar dealer is compelled, so to say, to buy Continental steel which he does not require at the same price. As far as I can understand you can sell him inferior stuff?

Mr. Peterson.—Not inferior, but what he wants. It serves his purpose better.

President.—Supposing we put a duty of Rs. 20 on the British steel and Rs. 40 on the Continental steel I don't think that the consumer is necessarily compelled to buy steel which he does not want. Why should he? If you supply the man with steel which he wants, and so does the British manufacturer, how is he affected?

Mr. Peterson.—I thought you were not considering the question of quality at all, but the question of depreciated exchanges. There will always be a difference in the Price. He wants low carbon steel. The British Standard Specification is too high for him. It costs us more to make that.

President.—The point is this. If the price of all steel is Rs. 120 per ton, then it is suggested that it is an unnecessary burden on the poor consumer, if all steel is Rs. 120 per ton.

Mr. Peterson.—Supposing you take the price of ordinary mild steel which comes from the Continent at Rs. 120, then the British Standard Specification steel would command a higher price.

President.—Can the British manufacturer supply the Continental quality?

Mr. Peterson.—He can.

President.—Then he would not ask for a higher price for a similar quality, would he?

Mr. Peterson.—In the case of the British manufacturer he would because it costs him more to manufacture the same steel than it costs the Continental manufacturer owing to general economic conditions. There would be a difference of about 30 shillings between the same class of steel in England and the same class of steel on the Continent, and the same between us and the importing countries. But in each case the price of the British Standard Specification steel would be slightly higher than that of ordinary mild steel.

President.—That will always happen?

Mr. Peterson.—Yes, because in such cases buyers insist on the steel being made to a particular analysis and insist on being supplied with a certificate. In the case of wagons for railways for instance, special steel is required. We would always charge an extra price for it. There is a different analysis and the steel is inspected. They pay for the inspection. But the ordinary bazar trade requires low carbon steel which is softer and does not require inspection or a certificate.

President.—Supposing that your steel is Rs. 120 a ton and the British steel is Rs. 100 and the Continental steel Rs. 80 and we put on a duty of Rs. 20 and Rs. 40.

Mr. Peterson.—You mean putting on discriminating duties?

President.—What would happen?

Mr. Peterson.—The result would be to raise the price of steel to Rs. 120. We would probably sell ordinary mild steel at about Rs. 110 and the British Standard Specification at Rs. 120.

President.—In that case the poor consumer will not pay Rs. 120; he will pay Rs. 110.

Mr. Peterson.—In all probability that is what would happen in practice.

President.—That is to say, he would get Indian steel?

Mr. Peterson.—If you fix by means of protection a certain price for anything which you may call slightly inferior and which costs us less then we will probably accept a lower price.

President.—So that the equalization of the price of the three kinds of steel would not necessarily involve the poor consumer in paying a higher price.

Mr. Peterson.—Not necessarily. You could easily discriminate the duty for steel below a certain carbon percentage or above a certain carbon percentage. I could give you the limits.

President.—Is that the only difference?

Mr. Peterson.—I think it is the only important difference.

Mr. Mathias.—Is that a practical distinction as far as the Customs authorities are concerned?

Mr. Peterson.—It is a common distinction made in many of the tariffs. I will give you the exact specification later on of the two different classes of steel.

Mr. Mathias.—You think it would be a practical proposition to distinguish these according to the carbon percentage?

Mr. Peterson.—I think so. However I would like to consider it and consult the Sales Manager on it and also the General Manager. I think it would be quite easy for the Customs to detect it. I might say that we should always be satisfied with a lower price on the bazar steel in practice. In practice the consumer will pay less.

President.—But the difficulty is this, you cannot meet the whole demand of the country.

Mr. Peterson.—Probably we will. Last year we practically stopped the import of bars in Calcutta for some months. We can probably stop the imports in time.

President.—Eventually that means that if you are able to do it the Continental inferior steel will go out.

Mr. Peterson.—That is what we would ultimately expect to happen.

Mr. Mathias.—But not in the near future?

Mr. Peterson.—As I say, we stopped the import of bars into Calcutta absolutely for three or four months. There was no import at all.

President.—This difficulty, so far as the consumer of British steel was concerned, was got rid of in the last two schemes by means of bounties. The price of British steel did not go up to the same extent.

Mr. Peterson.—The ingot bounty.

President.—Yes, otherwise he would have been mulcted by a higher price. So that unless any scheme that is put forward is accompanied by bounties the interest of the consumer, so far as his money's worth is concerned, would not be safeguarded under a system of duties.

Mr. Peterson.—That is what will happen. Whatever duties you put up, if you try to fix the price at Rs. 120 by means of a duty the Continental price would drop 5 or 10 shillings and the British would not.

Dr. Matthai.—Supposing we put a very high duty on Continental steel and a duty on British steel to make the price equal, so that you have

a very high tariff so far as the Continental steel is concerned, under the shelter of that you are suggesting that you would sell Continental steel at a lower price. So far as you are concerned what has happened in Calcutta is that you have been trying by lowering your prices to cut out Continental steel. But the difference that you make on Continental steel will not be the same difference as would exist if a lower duty were levied on Continental steel. There will still be a difference but the difference will not be quite so great.

Mr. Peterson.—Probably not. To-day it is probably selling too cheap.

Dr. Matthai.—That is not the point. I am looking at it from the point of view of the consumer of Continental steel. As business men it would certainly be to your interest to see that you have a certain advantage over the Continental man, so that you would push your price to a margin as near as possible to the Continental price *plus* the tariff, but you won't lower it to as low a level as you would have to if the duty on Continental steel were lower.

Mr. Peterson.—We would lower it, I think. This mild steel will always command a slightly lower price whatever duties you put on because it costs less to manufacture. It would obviously be impossible for us to demand the same price for mild steel as we are charging for the British Standard Specification steel made to a certain analysis and passing a certain test and obtaining a certificate.

Dr. Matthai.—I don't dispute that at all. But I think there would be a heavier burden on the consumer under this scheme.

Mr. Peterson.—I don't think it would make much difference.

Dr. Matthai.—The immediate result would be, if you fixed duties of Rs. 40 a ton on Continental and Rs. 20 a ton on British steel, that you would fix your price for Continental steel above what you would if the duty on Continental steel were, say, Rs. 30.

Mr. Peterson.—The actual result would of course be that the difference in the duty would be the difference in the price.

President.—It would be limited by that.

Mr. Peterson.—The competition which we have to face is really with Continental steel and its export price so far as mild steel is concerned and for these higher specifications in Continental steel, *plus*, say, 10*s.* 6*d.* British steel doesn't enter into competition. Most of the British steel that comes into the country in the shape of bars is probably special bars.

Dr. Matthai.—I find that last year in our Trade Returns the bars from the United Kingdom formed only 10 per cent. of the total imports.

Mr. Peterson.—Does that include fabricated?

Dr. Matthai.—That is unfabricated.

President.—The British bar becomes much more expensive than the Continental the duty being the same.

Mr. Peterson.—Yes.

President.—That may account for some reduction in the imports.

Mr. Peterson.—I think that the competition has always been with Continental bars. I don't think that British bars have ever been imported into this country in large quantities.

Dr. Matthai.—The position of galvanized sheets is precisely the other way.

Mr. Peterson.—Exactly.

President.—The things that really matter are bars, beams, angles and plates. So far as bars are concerned when we last reported the margin was £2 and to-day it is about £1-8-0 on the March figures, so that there has not been much variation, but if you take beams, the price in 1923 for British beams was £10 and for Continental £8, the difference being £2.

Mr. Peterson.—In heavy structural materials, angles, etc., Britain competes.

President.—In March the price of British beams was £7-6-0 and Continental £5-17-0, so that the difference is £1-9-0. The same thing applies to angles, where there was a difference of £2-10-0 in 1923-24 and to-day it is about £1-2-0. As regards plates the difference was then only £1-8-0. It has gone up now to £1-17-6. So far as bars are concerned, the position is more or less alike. As regards these other products, is there any question of the Continental steel being inferior?

Mr. Peterson.—No. That is not bazar material.

President.—So far as these products are concerned, is it purely a question of price?

Mr. Mathias.—There is no question of British Standard Specification in beams, angles and plates?

Mr. Peterson.—There will be a British Standard Specification and any person requiring it will be prepared to pay a higher price. But there is not the same competition.

President.—These represent fairly comparable qualities.

Mr. Peterson.—Yes.

President.—So that in the case of bars there may not be as strong a case for differential duties as there may be in the case of these other materials.

Mr. Peterson.—In the cese of bars what you have to do is to consider the Continental competition and to ignore British.

President.—As regards these other articles it may be possible to differentiate.

Mr. Peterson.—Yes.

President.—As you say the question doesn't arise in regard to sheets at all, nor for that matter as regards rails.

Mr. Peterson.—They don't manufacture rails in any large quantity by the open hearth process on the Continent. In plain black sheets there is competition from the Continent.

President.—Is there? We will have to go into that, but I haven't got the figures just now.

Mr. Peterson.—The import amounts to 27,000 tons from the United Kingdom. There again I don't think there is any question of quality.

Mr. Mathias.—Taking your fair selling price at Rs. 120, the British import price at, say, Rs. 100 and the Continental price at Rs. 80, how far would it affect you if for the purpose of calculating the duty we took a figure intermediate between Rs. 100 and Rs. 80?

Mr. Peterson.—If you took the half way figure, you would have to take a weighted average.

President.—We took the weighted average the first time and I think we went wrong.

Mr. Peterson.—If you want to take the half way figure, you must find out how much material is coming in at the higher price and how much is coming in at the lower price, otherwise you would not get the exact average figure.

Mr. Mathias.—Would the difference be considerable?

Mr. Peterson.—It will be. In each class of product you will find that there would be very considerable difference.

Dr. Matthai.—Supposing the scheme was for a uniform rate of duty and that uniform rate of duty was based on the weighted average derived from the imports of the past three years.

Mr. Peterson.—Are you going to do that for all classes of steel?

Dr. Matthai.—I am thinking of each product.

Mr. Peterson.—Probably there may not be much variation in future in the percentages of imports, if you take each product separately. If you take one weighted average for all, sheets will upset your calculations.

Dr. Matthai.—I want to ask you a question with regard to this. Leaving aside all these details about the scheme of differential duties, speaking as a business man with all the experience that you have, if you were in our position, would you suggest a scheme of differential duties?

Mr. Peterson.—It is a very difficult question to answer. I should like to have sometime to think it over.

Dr. Matthai.—I want to tell you the difficulties that I am feeling quite in a general way. This scheme of differential duties has two aspects to it:—(1) Is the thing workable? and (2) Is the advantage commensurate? Now from the point of view of the workability of the scheme, if you want to ascertain what precisely is British steel for Customs purposes, you can go by British specifications. You can go by the quantity of British materials, the value contributed by British workmanship or you simply take the shipment from a British port. My feeling is that on all these three bases you would find the thing exceedingly difficult to work. Now from the point of view of advantage there are really four parties to this. Is it any advantage to the Indian Steel Industry? Is it any advantage to the Indian consumer? Is it any advantage to the Indian tax-payer? Is it any advantage to the British steel maker? My feeling is that it is of advantage only to the British steel maker. That is the way in which the case has presented itself to my mind. When you consider the case you would keep these things in mind. If the thing is very difficult to work and the advantage is not commensurate, it would not be worth while doing it. If the advantage is really considerable one would like to consider it.

Mr. Peterson.—I understand that the object of the scheme of differential duties is to ensure that too high a protection is not imposed.

President.—Another thing is that you should get the amount of protection without frequent interference.

Mr. Peterson.—Yes, stabilised prices. We made exactly the same proposal.

Dr. Matthai.—My difficulty is not the difficulty of my colleagues in this matter. I want to make my position perfectly clear. I am trying to distinguish the method of differentiation from the method of off-setting duties. If you had a system of off-setting duties, you could have stabilised prices. Whether you should, in addition to that, have a method of differentiation is my difficulty.

President.—The question of the off-setting duties is precisely what brings in the differential duties. You could not put on an off-setting duty on the ground of depreciating exchange against Great Britain for instance.

Dr. Matthai.—That is, assuming off-setting duties are based entirely on depreciating exchanges. Off-setting duties are based on a number of considerations.

President.—One of the main things is the question of the depreciated exchanges on the Continent and if it becomes necessary to increase the duties, which would be the best method of doing so? Putting on an off-setting duty, which mean an additional duty on the Continental steel, which means a differentiation between the British and Continental steel, or an equal duty on both?

Mr. Peterson.—I would like to know if I have got this point plainly. The proposal is, as I understand it, that we should have a basic duty fixed on a country with a stabilised exchange on the gold basis. In addition to that against all countries in which the exchange is not stabilised and not on the gold basis there would be such additional duty as may be necessary. The second duty would be adjusted according to circumstances, *i.e.*, dumping or depreciated exchanges, etc. These are the two principal

causes. I take it that is the idea. I would like to have at least a fortnight's time to think over these proposals. Would you also like me to consider the machinery by which off-setting duties should be set in motion?

Dr. Matthai.—We should appreciate it very much.

Mr. Peterson.—It is really a question on which I will have to consult both the operating department and the sales department, because all kinds of considerations arise which don't occur to one without very close examination.

President.—So far as off-setting duties due to depreciated exchanges are concerned that is comparatively simple.

Mr. Peterson.—Yes.

REPRESENTATION.

(*a*) *Rails.*

President.—The most important thing which we have to deal with in your representation is the question of rails. I think your main complaint is against the Palmer group. You say that even when you offered to reduce your price, you were not able to secure orders.

Mr. Peterson.—We actually quoted as low as Rs. 100.

President.—Is that to the Burma Railways?

Mr. Peterson.—Yes.

President.—Still you were not able to secure the orders and therefore you lost the bounty that you were going to get on rails.

Mr. Peterson.—That is the point.

President.—First of all I want to go into purchases made abroad by railways during the last two years.

Mr. Peterson.—We have no information on that really.

President.—I shall give it you. The Assam Bengal Railway have purchased only from you, I think.

Mr. Peterson.—As I say, I have really no reliable information and cannot get it. I cannot answer any question on that.

President.—We will take the East Indian Railway.

Mr. Peterson.—They were not under any contract with us.

President.—I am going through the replies of these railways so far as we have received them. Is the Assam Bengal Railway in the Palmer group?

Mr. Peterson.—It is a Palmer railway.

President.—I am confining myself at present to these two years, 1924-25 and 1925-26. Then as regards the East Indian Railway they purchased practically everything from you except these orders mentioned by them.

Mr. Peterson.—The East Indian Railway is a State Railway since 1925.

President.—In 1924-25, they purchased 12,028 tons at £7-13-6 which comes to Rs. 102. They give their freight as Rs. 11-11-9. To that if you add Rs. 14 for duty, and Rs. 3-2-0 for landing charges the total comes to Rs. 130-13-9. Why were you not asked to quote for this order?

Mr. Peterson.—We could not have supplied them more than we did in 1924-25 in any case because we were under contracts with the Palmer Railways and with the Government of India for the whole of our output of rails.

President.—Therefore they were not to blame.

Mr. Peterson.—We have not made any complaint about the East Indian Railway.

President.—So far as this order was concerned, it was necessary for them to place it elsewhere.

Mr. Peterson.—They had to buy from somewhere.

President.—What was your average price in that year?

Mr. Peterson.—Rs. 122-8-0 to the Palmer Railways and Rs. 130 to Government.

President.—The price works out very nearly to Rs. 130. Why were you not able to supply?

Mr. Peterson.—In 1924-25 I find that we took an order from the East Indian Railway for 22,855 tons. That was all we could roll for them.

President.—At what price?

Mr. Peterson.—At £9-18 f.o.b. Calcutta=Rs. 129 at 1*s.* 6*d.* less Rs. 3 for freight.

President.—I want to know why that order went abroad.

Mr. Peterson.—We could not have supplied any more.

President.—They say that they have placed an order with you for F. F. New British Standard Section rails.

Mr. Peterson.—They have altered the section of the rails. All the Railways are now asking for the new section.

President.—Does that make any difference in price?

Mr. Peterson.—No.

President.—The Bengal Nagpur Railway purchased in 1924-25 from Germany 4,243 tons at £6-10-0 f.o.b. *plus* 16*s.* 10*d.* for freight.

Mr. Peterson.—They also purchased from us 7,494 tons in the same year at Rs. 140. Can you tell me the date of the order which they placed in Germany?

President.—They only say 1924-25. I want to know how this order went abroad.

Mr. Peterson.—I don't know. What was the section?

President.—They don't say anything about that.

Mr. Peterson.—They might have been light rails.

President.—They are heavy rails.

Mr. Peterson.—I was under the impression that the Bengal Nagpur Railway had placed all their orders with us.

President.—You were giving them special rates, weren't you?

Mr. Peterson.—Yes, Rs. 110, but that expired in 1924.

President.—Then, you do not know how it happened.

Mr. Peterson.—I don't know how that happened. As a matter of fact we could not have rolled any more rails in that year unless we had been informed at the beginning of the year.

President.—That is a very important point from the point of view of the Railways.

Mr. Peterson.—It is largely due to the fact that they do not make out their programme in time. If they could give us their programme a year ahead, they would get their supplies from us.

President.—I will come to that point presently. They also purchased from the Cargo Fleet Iron Company. Is that a British Company?

Mr. Peterson.—Yes.

President.—They purchased 632 tons of 40 lb. rails at £7.

Mr. Peterson.—Was that in 1924-25?

President.—In 1925-26. It works out to Rs. 123 including everything. How is it that you did not get that order?

Mr. Peterson.—We are not very anxious to roll light sections.

President.—As regards the quality of your rails they say " a few cases have been reported of rails corroding quickly and these are under investigation by the Metallurgical Inspector at Tattnagar."

Mr. Peterson.—I cannot say anything definite about that. Mr. Alexander told me that a complaint had come in regarding certain of our rails rusting quickly and he sent an officer who had reported that they were left in the open along with a certain number of English rails and that the English rails had rusted worse. We can only wait until we get the report on this complaint.

President.—They also say that " the chief complaint is that the sections are not as accurately rolled as British rails."

Mr. Peterson.—I have not heard of that.

President.—You had better make a note of it and enquire.

Mr. Peterson.—I don't understand that complaint. Our rails are really examined and tested much more accurately and severely than the British rails. On a question of that kind, I would question the Metallurgical Inspector and his staff. I think that you had better consult Mr. Mather who has had five years experience of the inspection. It is really a reflection of the Government Inspection that it has passed sections which were not accurately rolled. I can only say that during the last five years I have known of only one serious complaint. In that case the Bombay, Baroda and Central India Railway wrote to us. As a matter of fact we knew that that was happening. Some of the rails were burnt at that time, but they reported that the post-war English rails which had been laid along side were equally bad.

Dr. Matthai.—How long ago did this occur?

Mr. Peterson.—Sometime last year. In the early part of the year.

President.—In 1924-25 the Great Indian Peninsula Railway bought 809 tons of rails at £8-13-9, which comes to Rs. 143 including freight, duty and landing charges.

Mr. Peterson.—That can be compared with our price of Rs. 140 to the Bengal Nagpur Railway.

President.—They also bought 1,427 tons of fishplates at £9-18-6.

Mr. Peterson.—These small orders, I don't think, are really of much importance to us. They may happen to want the rails in a great hurry and we may not be able to supply them because of our other commitments.

President.—In 1925-26 they bought from Belgium about 4,274 tons of rails at £6-19-6 f.o.b. Antwerp. Were the Tata Company unable to meet that demand?

Mr. Peterson.—I don't remember that.

President.—They say " Tatas were unable to meet the demand and the order was arranged by indent on Home. The Railway Board in their letter No. 1705 S-XVI, dated the 20th May 1926, directed that no restriction should be placed on Continental manufacture as the High Commissioner is generally guided by business principles of accepting the lowest possible tender."

Mr. Peterson.—I could have an enquiry made as to that point. As soon as they become a State Railway they came under the Railway Board contract to take their supplies from us. So, it must have been before they came under State control.

Prseident.—This was in 1925-26.

Mr. Peterson.—I might just clear up this point. We are under contract with the Railway Board to supply all their requirements up to a certain tonnage. If the Great Indian Peninsula Railway did not come under that, the Railway Board would have prior right to take rails from us.

President.—They bought 785 tons of rails in 1925 from England at £9-13-6.

Mr. Peterson.—That must have been at the beginning of 1925.

President.—The price of British rails has not gone up so high. With the duty and other charges it makes a total of Rs. 156.

Mr. Peterson.—It has not been as high as that. It is a very high price. It may be a specially treated rail. It is just a possibility.

President.—As regards the Bombay, Baroda and Central India Railway, they have never bought anything from outside.

Mr. Peterson.—No.

President.—It is rather an important point, because its headquarters are in Bombay, and for that reason the Madras and Southern Mahratta Railway is not at a particular disadvantage as compared with the Bombay, Baroda and Central India Railway as regards distance.

Mr. Peterson.—There is a little advantage in favour of the Bombay, Baroda and Central India, but nothing to speak of.

President.—So far as the freight is concerned it would be about the same in both cases, would it not?

Mr. Peterson.—Yes.

President.—So that it is not understood why the Madras and Southern Mahratta and the Burma Railway do not purchase from you if the Bombay, Baroda and Central India Railway can.

Mr. Peterson.—There is much cheaper freight from England to Rangoon than from Calcutta to Rangoon. Liners quote cheaper rates from England to Rangoon that from Calcutta to Rangoon. It is perhaps a question of return freight.

President.—In that case the position of Burma is peculiar and we will leave out Burma for the present. So far as railway freight is concerned, I take it the Madras and Southern Mahratta Railway is practically in the same position as the Bombay, Baroda and Central India Railway.

Mr. Peterson.—They say they are at a great advantage because of the two ports—Madras and Goa—as they can land rails at either end of their line, so that their freight is reduced.

President.—That is a reason.

Mr. Peterson.—That is one of the reasons they have given.

President.—Then as regards the quality of your rails, the Bombay, Baroda and Central India Railway say that on a comparison with the English post-war rails " the only difference noticeable is that the Tata rails when laid on the outside of curves show evidence of a slight flow of the metal of the head on the running side. Such flow in the case of English rails has only been noticed in one or two isolated cases. When laid on the straight Tatas and post-war English rails show equally satisfactory." Then they go on to say that " Tatas rails show evidence of a soft skin but that in other respects they are sound."

Mr. Peterson.—That was last year. There was a certain amount of trouble owing to the absence of re-heating furnaces. We have now corrected that.

President.—As regards post-war rails they say " They have not been found as good as English pre-war rails. Some English rails purchased in 1919-20 from Messrs. Dorman Long and Company were found to be no better than the Tatas." That is rather a left-handed compliment! Then take the Madras and Southern Mahratta Railway. For 1926-27 they apparently bought rails from abroad—British or Continental we don't know. They simply say " Home supply." The price given is £6-8-6 *plus* freight 16 shillings, which comes to Rs. 96-5-4, and the landing charges and duty bring the total to Rs. 113-7-4. What was your offer to the Madras and Southern Mahratta Railway?

Mr. Peterson.—Rs. 105 f.o.r. Tatanagar to all the railways.

President.—Apparently they did not accept this offer and bought at Rs. 114.

Mr. Peterson.—There was the freight from Jamshedpur to be taken into consideration I suppose. They called for tenders in London.

President.— Were you asked to quote?

Mr. Peterson.—Not in India but in London. We had an opportunity of quoting when they called for tenders in London and we tendered and they placed an order with us for 1,900 tons.

President.—They also bought 444 tons of fishplates. It comes to this that except in the case of the Madras and Southern Mahratta Railway it appears that you had not been able to supply.

Mr. Peterson.—We have made no complaint about last year.

President.—There is this point to be considered. The railways must be quite sure that they would get the rails as and when they require them. Apparently so far they have not been able to do so.

Mr. Peterson.—In this particular year it was due to the fact that we did not get any decision on the point until very late in the year only after we had completed our rolling programme. I think this order from the Madras and Southern Mahratta Railway was placed with us sometime in March. At any rate their tenders were called for for the supply of 1926-27 sometime in February or March. If those tenders had been called for in September or October there would be no difficulty in getting their supplies. The longer they can fix their programme ahead the easier it is for us to supply.

President.—They cannot call for tenders three years ahead. Ordinarily speaking they must call for tenders either in the year in which they require the rails or some time before.

Mr. Peterson.—If we were put in a position in which we would know that we are going to get an order, we would keep the mill running at a certain average production and we would pile up stocks. In this particular case we started off with trying to find out what orders we would get, what the prices would be, and we were negotiating for nearly 4½ months before they came to a decision.

President.—The position of the railways is ordinarily this. They do not know what they are going to get for this year until the budget is published. They must order this year or, by arrangement with the Railway Board or any other sanctioning authority, for the following year.

Mr. Peterson.—You said they cannot call for these orders years ahead. I can give you an instance in which the Palmer Railways were very anxious to call for tenders for five years supply so that they could take advantage of the low prices. We pointed out that it would be extremely difficult for us to tender because of the uncertainty as to the protection, and I believe that it was only owing to the considerable pressure put on them by Government that they did not call for tenders for five years. Let me put that more definitely. We were informed by the Railway Board that Messrs. Rendel, Palmer and Tritton had advised the Palmer Railways to call for tenders for five years and we at once pointed out to the Railway Board that as the Statutory enquiry had not been concluded, this was placing the Indian manufacturer in a very unfair position. It seems that when it suits them they can contemplate ordering more than a year ahead.

President.—We have got to consider supposing this had happened—

Mr. Peterson.—You can see in what a dangerous position the Steel Company was, because the new rail mill is not fitted to roll structural material.

President.—What would have been precisely the effect on the Steel Company?

Mr. Peterson.—It would have been a loss of 85,000 tons a year.

President.—That would have reduced your output by about half?

Mr. Peterson.—Yes, our rail output by about a half.

President.—Apart from anything else it would have sent up the works cost of the remaining half.

Mr. Peterson.—It must have had that effect.

President.—In the event of their being a scheme of bounties, you wouldn't have earned the bounty.

Mr. Peterson.—That is what actually happened this year.

President.—And Government would have made a little more money if protection took the form of increased duty.

Mr. Peterson.—Yes.

President.—And the railways would not have benefited by that agreement in that case.

Mr. Peterson.—They would not have benefited by their tenders.

President.—Then you have made a definite statement that you were prepared to reduce your price to Rs. 105 f.o.r. Tatanagar.

Mr. Peterson.—We made that statement to Government.

President.—And it was refused?

Mr. Peterson.—Yes, and a further tender of Rs. 100 in the case of the Burma Railways was refused. The actual offer was made in London which was refused by the Burma Railways.

Dr. Matthai.—That is the last offer you made.

Mr. Peterson.—Yes.

President.—How much would that have given you?

Mr. Peterson.—Rs. 133 including the bounty on ingots.

President.—Of this group of six railways, I see that three have been buying rails from you.

Mr. Peterson.—One is practically compelled to buy because of its geographical position, *i.e.*, the Bengal and North-Western Railway which is nearer to the works than it is to any port.

President.—Where is its terminus?

Mr. Peterson.—Mokameh Ghat I think for that purpose.

President.—Where is its Head Quarters?

Mr. Peterson.—Gorakhpur. It runs from Mokameh Ghat through Bihar.

President.—The same argument will apply to H. E. H. the Nizam's Guaranteed State Railway which is nearer.

Mr. Peterson.—Yes.

President.—The case of the Bombay, Baroda and Central India Railway is exceptional in that respect.

Mr. Peterson.—The Bombay, Baroda and Central India Railway will take a lot of its rails up their line in which case they would more or less come between Bombay and Jamshedpur.

President.—Beyond Ahmedabad, for instance, it would have no advantage in the matter of freight.

Mr. Peterson.—No.

President.—Besides it would take the material on its own system.

Mr. Peterson.—Yes.

President.—If it had to get it from Tatanagar, it would go on foreign systems.

Mr. Peterson.—Yes.

President.—In that case it would be cheaper for it to get imported rails from the point of view of freight.

Mr. Peterson.—Yes.

President.—They have not been doing it.

Mr. Peterson.—No.

President.—As regards the Madras and Southern Mahratta Railway, you said that they had invited tenders in England for 19,000 tons though you had offered at Rs. 105. I don't find anything about that here. They say that they only ordered 13,404 tons. Is that the order?

Mr. Peterson.—I could not tell you. The tender may have been for 19,000 tons, but they might have bought only about 15,000 tons.

President.—As regards the South Indian Railway, we have not yet heard about the 1,300 tons mentioned in your note. In their case you offered at Rs. 100.

Mr. Peterson.—Yes. We got a telegram saying that our tender was not accepted.

President.—So far as the South Indian Railway is concerned what was your offer?

Mr. Peterson.—Rs. 105.

President.—Their port is also Madras.

Mr. Peterson.—Yes.

Dr. Matthai.—Could they not get things from Negapatam which would be nearer to Trichinopoly?

Mr. Peterson.—I don't think they do; at any rate that is what the Agent told me.

President.—As regards this difference of Rs. 16 in the matter of freight, is it the rate charged on rails?

Mr. Peterson.—That is the rate we would invoice them out at.

President.—Would the Bengal Nagpur Railway not charge the Madras and Southern Mahratta Railway at a lower rate than it would charge an outsider for railway materials?

Mr. Peterson.—We can only take the railway material freight rate.

President.—When one railway carries goods for the use of another railway, is not there a smaller rate?

Mr. Peterson.—It depends on different railways. Some charge a general rate; some charge a rate for themselves and a different rate for others and some charge the railway material rate for all railways. What we have taken is the freight on ordinary railway material—400 maunds and over for revenue purposes. I take it that that means what they charge themselves.

President—It makes a difference of Rs. 16.

Mr. Peterson.—Tatanagar to Madras—Rs. 16, the distance being 1,043 Miles.

President.—Let us take the Madras and Southern Mahrata Railway. I think that the Bengal Nagpur Railway joints the Madras and Southern Mahratta Railway somewhere near Waltair.

Mr. Peterson.—At Waltair.

President.—That is about 500 miles from Calcutta.

Mr. Peterson.—About 558 miles from Tatanagar to Waltair.

President.—For half the distance, they carry the rails on their own system.

Mr. Peterson.—They would not make any allowance for that. We raised that point before. Take another station Bezwada which is nearer to Madras. The distance from Tatanagar to Bezwada is 775 miles and from Bezwada to Madras it is 268 miles. But they regard every thing as from the point of view of their terminal port. They don't consider where the rails are required at all.

President.—From that point of view the consumer at Lahore may say that his port is Calcutta.

Mr. Peterson.—It is probably a matter of account keeping. Except for the time when they were under a contract with us, they have always imported their rails. The whole administration has been in the habit of working the price out as from the port, and they would find it difficult to change it.

President.—Apart from the question of accounts, we want to consider the real burden. Sixteen rupees that you have given is no measure at all of that burden. It is probably the maximum.

Mr. Peterson.—Probably, it is.

President.—How are we to work that out?

Mr. Peterson.—It depends on where they require the rails.

President.—It is quite obvious that they cannot require all the rails in Madras.

Mr. Peterson.—The Madras and Southern Mahratta Railway lie half way nearer us and half way further away. In the case of the South Indian Railway, Madras is their port.

President.—I am talking of the Madras and Southern Mahratta Railway. It is very difficult to see what the incidence of the extra freight per ton is on this railway.

Mr. Peterson.—I would attempt to give you a note on that. Take the case of the Bombay, Baroda and Central India Railway. The Madras and Southern Mahratta Railway and the Bombay, Baroda and Central India Railway are practically in the same position as far as we are concerned. The freight from Ajmere to Bombay is Rs. 7 and from Ajmere to Tatanagar is Rs. 17, the disadvantage being Rs. 10.

President.—As regards Tatanagar to Rangoon, how do you calculate the difference at Rs. 16?

Mr. Peterson.—The freight works out to Rs. 15 and the extra rupee is for incidental expenses.

President.—How did you work it out? Take coal or any other commodity. I think that the ordinary freight is Rs. 6 per ton from Calcutta to Rangoon.

Mr. Peterson.—I have not got the details for this Rs. 15 here.

President.—As regards this difference, the complaint is not peculiar to the Railways. A consumer in Bombay may say the same thing about steel.

Mr. Peterson.—It is not peculiar to the Railways. It only arises in this case owing to the fact that protection in the case of rails is given by bounty instead of duty. Otherwise, it would not have arisen. If they are in a position to get rails cheaper, we are not in a position to drop our price. The only distinction is that the actual cost of transport is probably very much less than the rates shewn. As they use practically their own line, probably it does not cost them as much to carry the rails.

President.—Then, with regard to the question of specification?

Mr. Peterson.—This is a point on which I may be wrong.

President.—You say "For the first time we have had serious complaints as to the quality of our rails. We have not heard of any except those I read out so far.

Mr. Peterson.—At the time of tendering we saw the Consulting Engineers—Messrs. Rendel Palmer and Tritton—and they raised two objections. The first was that they objected to the larger ingots—5-ton ingots—and secondly they objected to wash heating which really is reheating the bloom in the heating furnace.

President.—This is not peculiar to your duplex process, is it?

Mr. Peterson.—No. It is an American practice which is not used in England because they roll smaller ingots having smaller mills.

President.—What is the advantage of that?

Mr. Peterson.—We say none.

Mr. Mathias.—Do they not use wash heating in England too?

Mr. Peterson.—In some plants they do and in some they don't.

Dr. Matthai.—What harm is it supposed to do?

Mr. Peterson.—According to them an ingot is not of the same consistency all through when it is heated a second time.

President.—So far as we are concerned, I have read all the replies from different railways, except two and they don't make any such complaints.

Mr. Peterson.—I can explain that. We telegraphed to London to tender for these rails. We immediately received a telegram back from our London

office saying that our tenders would not be considered unless 5-ton ingots and wash heating were discontinued.

President.—So far as you are concerned, that would mean that you cannot roll any rails at all.

Mr. Peterson.—We would have to go back to our old inefficient practice, and raise costs so that we could not compete with English rails at all. That would rule out our rails altogether: that is the actual effect.

President.—Was your practice the same, when the Palmer Railways were taking your rails?

Mr. Peterson.—The new plant was not then erected. There was no duplex process then. It was ordinary open hearth steel.

President.—The open hearth steel is 3-ton ingots.

Mr. Peterson.—The old blooming mill ingots are 3-ton ingots. On the new blooming mill we increased them to 5-ton ingots.

Mr. Mathias.—Why is wash heating necessary?

Mr. Peterson.—Wash heating is required because the ingot cools. This is done in the reheating furnace and its installation has reduced the seconds from 30 per cent. to 8 per cent.

President.—You use more open hearth steel ingots on the new rail mill.

Mr. Peterson.—80 per cent. of the rail steel going through the new blooming mill is open hearth steel.

President.—Are they not 3-ton ingots?

Mr. Peterson.—No, 5-ton ingots.

President.—If you are to get down to 3-ton ingots you cannot use the new rail mill.

Mr. Peterson.—We have got over the objection. Mr. Mather can tell you the whole course of these negotiations because we got him to satisfy the Consulting Engineer that the process is sound.

President.—Since he has been home?

Mr. Peterson.—Yes. We asked him to help us in the matter. He can give you full information.

President.—So far as this complaint goes, you don't wish us to investigate it.

Mr. Peterson.—No.

President.—You think that they are making excuses.

Mr. Peterson.—Yes, to avoid the use of Indian steel.

President.—Is that your allegation?

Mr. Peterson.—Yes.

President.—We need not go into that?

Mr. Peterson.—No.

Mr. Mathias.—You say about the process "The only object of this is to exclude rails of Indian Manufacture as the Basic Bessemer process is not used in England."

Mr. Peterson.—That is a point on which there is some doubt. But Mr. Alexander states that our process has been held to be definitely Acid Bessemer process.

President.—That is what I thought too. That being so, this description will not exclude your rails.

Mr. Peterson.—If that is granted?

President.—What do you wish us to do? Do you want us to enquire into that? First of all, we do not know whether this is the specification.

Mr. Peterson.—Yes.

President.—Secondly if Mr. Alexander's opinion is correct, this specification will not exclude your rails.

Mr. Peterson.—We want a definite statement that the Consulting Engineers are not going to exclude the duplex process steel.

President.—You must be bound by your experts opinion, must not you? Mr. Alexander said yours was the Acid Bessemer Basic open hearth process.

Mr. Peterson.—The reason why we have put in that point in our representation really is that our London office drew our attention to this specification and I was under the impression that this specification was intended to exclude the duplex Bessemer process. I may be wrong, but we do want to be quite clear that the duplex Bessemer process is not excluded. May I suggest that so far as the Steel Company is concerned we would be quite satisfied with Mr. Mather's opinion on the point. He has been at Home and he probably knows exactly what they do mean by this specification and whether they propose to exclude by this specification the Duplex process. We would be quite content with Mr. Mather's opinion about it. The point naturally is that if the Consulting Engineers are trying to exclude the duplex process that of course would be a serious matter for us.

Dr. Matthai.—With regard to the quality that is the only outstanding point, the other thing has been got over?

Mr. Peterson.—Yes, and the proof of that is that the Madras and Southern Mahratta Railway have placed an order for, 1,980 tons of rails with us. They would not do that if the quality of the rails were so inferior that they could not use them. I only give this as an instance of the difficulties placed in our way.

Dr. Matthai.—There cannot really be much in it because half the railways in India do take your rails, so I don't think the question really arises and that we should go into it. You make this allegation in your representation which if it was literally taken.....

Mr. Peterson.—As I have already said my only object is to ensure that this specification does not exclude Indian steel. I can give you the whole correspondence if you like.

President.—You must give us the actual specification.

Mr. Peterson.—I have not got it.

President.—Secondly you must establish that the specification would exclude your rails. It is now merely an inference.

Mr. Peterson.—I don't ask the Tariff Board to go into this question.

President.—Then we shall drop it.

Dr. Matthai.—Is the opinion generally held by many British engineers that American rails are inferior?

Mr. Peterson.—The opinion generally held is that anything that is not British is inferior!

President.—Then you propose in your representation that the only thing to check this tendency of the Indian Railways to avoid the purchase of Indian material is the imposition of a substantial duty.

Mr. Peterson.—I do not see any other way to do it.

President.—There are other considerations. One of them is that they must absolutely be able to depend on supplies from you.

Mr. Peterson.—Yes, that is essential.

President.—Can we be sure that it will be so?

Mr. Peterson.—The total demand for rails this year is estimated by the Railway Board at 171,000 tons and we can roll 200,000 tons.

President.—You have not rolled that quantity yet.

Mr. Peterson.—We are rolling at the rate of 12,000 tons a month. Are they any safer in other countries? In England for the last two months they have not been able to make any accurate delivery up to the present time under any contract.

President.—But there if one works cannot deliver they would go to another works.

Mr. Peterson.—At the present time they cannot.

President.—Before the Railways are compelled to take all their rails from you the Board must be satisfied that they would get the rails.

Mr. Peterson.—We would guarantee to roll a certain quantity provided we were certain that orders would be obtained and that we would not be left till February or March of the year in which they want the rails to draw up our programme. That makes our position very difficult. We cannot roll for all the railways in one week.

President.—We may be sending some portion of this evidence to the Palmer Railways and I will just repeat what we discussed yesterday. We were considering yesterday, whether if a duty was imposed it should be obligatory on you to provide rails at a certain fixed figure above your works costs.

Mr. Peterson.—I see no difficulty about that.

Dr. Matthai.—Supposing provision was also made that you should get sufficient notice.

Mr. Peterson.—I think the Steel Company would agree to that but the delivery would have to be f.o.r. works and.....

President.—Supposing your works costs were Rs. 85 per ton and your overhead charges and manufacturer's profit were fixed at, say Rs. 50, the price would come to Rs. 135 a ton. The varying factor there is the works cost. It should not go up. When it goes down the prices also go down.

Mr. Peterson.—Supposing it goes up, what happens then?

President.—It should not go up.

Mr. Peterson.—But supposing it does. Supposing there is a rise in the price of coal, or other circumstances which are beyond our control altogether?

President.—That factor of the coal we have got to take into account with regard to all your production. If the price of coal soars too high then of course our scheme of protection would be ineffective, because all our calculations would go wrong. When we fix any price at all for any steel we have to take into consideration the question of the price of coal, so please do not bring in a complication that is not there. That is supposed to be eliminated when the scheme is put forward by us.

Dr. Matthai.—That is to say with regard to rails you take the risk which is incidental to all steel.

Mr. Peterson.—We were very seriously blamed by this Board itself for making contracts extending over a period of years at a fixed price. That is what you are asking us to do.

President.—It is not a fixed price.

Mr. Peterson.—It is a fixed price that will only drop but can not rise.

President.—If you still talk of the variations in the price due to a rise in the price of coal it goes to the root of the thing. In our scheme we have to see that you get such and such price for rails along with other products. That price consists of X which is the works cost *plus* Y which is your overhead charges and profit. Y remains a constant factor, X is liable to change.

Mr. Peterson.—Supposing there is a strike, say, on the Bengal Nagpur Railway. It will force our works costs up. That is going to put us to a serious expense.

President.—What would happen to any protective scheme if there was a strike in your works?

Mr. Peterson.—We would be protected by the ordinary commercial condition as to *force majeure*.

President.—In our protective scheme we have got to take into account all contingencies—in an ideal scheme we are supposed to have considered all these things—and then we are supposed to have said, having regard to these factors we fix such and such as the price of your steel that applies to rails as well as to your other products—

Mr. Peterson.—I am only speaking from a commercial point of view. We are under contract to supply a number of rails at a certain price. Supposing we did not supply these, the penalty in consequential damages might be very heavy. They might buy in the open market which might cost them a great deal and that is why we must have the ordinary commercial protection, that is to say if owing to causes outside our control we are unable to supply, we must be protected, otherwise we might land ourselves in enormous losses.

President.—If we put a duty on rails they are entitled to ask for a safeguard against your taking advantage of a serious rise in world prices?

Mr. Peterson.—We are perfectly willing to supply under ordinary commercial safeguards. In the case of a strike on a railway we would be prevented from giving delivery.

President.—The question of delivery does not arise, for it will be f.o.r. works.

Mr. Peterson.—It does, because we have to despatch. Supposing a strike occurred on the Bengal Nagpur Railway our supplies of coal would be cut off immediately.

President.—That would apply to the whole scheme.

Mr. Mathias.—What about your present contracts?

Mr. Peterson.—Our contracts would not amount to very much.

Mr. Mathias.—Your long term contracts have just expired?

Mr. Peterson.—We will always be protected by the *force majeure* clause.

President.—The only thing would be in a case like that to remove the duty, if the strike lasts for any length of time, and let them have recourse to the open market.

Mr. Peterson.—That will be the only thing to do. If that is provided we would be only too pleased to have an arrangement whereby we supply all the Railways at a definite fixed price.

President.—The rails must be regarded as a special question. There are two things. First of all you must be able to get the whole of the market that is available. On the other hand the railways must have a guarantee that they will get the rails, not only that but also that their prices will not be unduly high.

Mr. Peterson.—We actually made that offer to the Government of India two years ago. We offered to supply all the rails required in India at a price to be fixed by them.

President.—You suggest all these other safeguards?

Mr. Peterson.—We should be satisfied if we were not held liable for non-suppliance in a case in which we could not supply for causes beyond our control. I am thinking of a case like 1920. In 1920 if we had not been able to supply these rails, they would have bought in the open market and claimed damages from the Company.

Dr. Matthai.—The provision in the usual commercial contracts against things of this kind would not apply to a change in the price of coal, it would apply only to a thing like a strike, would it not?

Mr. Peterson.—These are the clauses (read).

"The Company will not be in any way liable for non-performance either in whole or in part of any contract or for any delay in performance thereof in consequence of strikes, shortage of labour, break down or accident to machinery or other accidents of whatever nature, failure on the part of the Railway Company to supply sufficient wagons to carry essential raw materials to and finished products from the Works and all causes of whatever nature beyond the Company's control."

Dr. Matthai.—Even if you included that provision that would not cover a rise in the price of coal?

Mr. Peterson.—No.

Mr. Mathias.—An increase in the price of coal is a matter beyond the Company's control?

Mr. Peterson.—Yes.

Dr. Matthai.—Prices of raw materials and so on?

Mr. Peterson.—These are not outside our control in that sense.

Dr. Matthai.—The difference between the old contracts and this is that your fair selling price is fixed by an impartial body like the Tariff Board which was not so in the original case.

President.—That had very little reference to your fair selling price. Now when we are trying to fix your fair selling price, the main thing is to ensure that, and the other thing is that the railways must know that in any case they would not have to pay more than that.

Mr. Peterson.—We would agree to an arrangement of that kind so far as we are concerned.

President.—You start with the works cost that we fixed at the outset, *i.e.*, the price in the scheme. Then we say you must get so much over it constituting your overhead charges and your manufacturer's profit. These two items remain the same.

Mr. Peterson.—What about the reduction in the works cost?

President.—Yesterday we said that you should get that as your provisional price and that if there is very slight variation there is no adjustment. If there is a variation of Rs. 4 or Rs. 5, then there is an adjustment in the following year. You cannot have any adjustment unless it amounts to say Rs. 5.

Mr. Peterson.—Yes.

Mr. Mathias.—For that purpose you will have to produce your cost sheets.

President.—You will have to send your cost sheets either to the Railway Board or to any authority that Government may appoint for the purpose.

Mr. Mathias.—Would you agree to that?

Mr. Peterson.—Yes. The Commerce Department of the Government of India at present get our costs monthly.

President.—There is no real difficulty except as regards these unusual circumstances.

Mr. Peterson.—I don't think there is.

Mr. Mathias.—Would that deprive you of any inducement to reduce your costs?

Mr. Peterson.—In a steel works a reduction in the operation of one main product covers some reduction throughout. The whole thing is interrelated. You could not reduce the costs on a thing like the rail mill without reducing it throughout the plant.

Mr. Mathias.—The inducement to reduce the costs of other products would be sufficient to ensure that the cost of rails would be reduced also.

Mr. Peterson.—Yes.

President.—In arriving at our decision we have got to arrive at the works cost in each case. There is one other point as regards the Continental rails. Do you suggest that Continental rails in any case ought to be ruled out altogether? What is your proposal as regards that?

Mr. Peterson.—I think you will find that settled by the International Rail Makers Association. I understand that a final meeting is being held this month. They allocate to various countries various allotments. The Continental rail makers will not be supplying rails to India at all.

Mr. Mathias.—I thought you said sometime ago that British rails only are imported.

Mr. Peterson.—Yes. There never has been any competition in the past against Continental rails and I have never heard of any in India except the cases just given by the Board.

President.—If this International Rail Makers Association comes into being, I take it that Great Britain will supply the British Dominions and India.

Mr. Peterson.—Yes.

Dr. Matthai.—That was the position in 1914.

Mr. Peterson.—Yes.

President.—So, that question of foreign rails doesn't come in.

Mr. Peterson.—America might come in.

President.—But America doesn't join?

Mr. Peterson.—I understand America cannot join, because it is against the Trust Laws in the country. But they are coming to an arrangement. I don't know how it is being done. I don't think you need differentiate between Continental rails and British rails.

Mr. Mathias.—You suggest we could fix our scale of duty on English rails.

Mr. Peterson.—Yes.

President.—As regards this International Rail Makers' Association, what is the position? How far would it affect India?

Mr. Peterson.—We are discussing this with them. There is a suggestion that we should share the market half and half which we could not consider.

President.—It might introduce a complication into our system if you joined the Association.

Mr. Peterson.—We are not thinking of joining them.

President.—Do you know what price they are going to fix?

Mr. Peterson.—£6 is the minimum.

President.—Is that f.o.r. works?

Mr. Peterson.—Yes.

President.—That would not pay you.

Mr. Peterson.—I don't think that they will really export at that price.

President.—I think that was the price provisionally fixed. That price of £6 does not help us in any way.

Mr. Peterson.—That is the minimum price. They won't quote that price. The effect of that is that a Member of the Association is not allowed to quote below it. He can quote above it if he likes. I don't think you will find English makers quoting £6 for rails.

President.—What I mean to say is that that is no basis for us to take.

Mr. Peterson.—No.

President.—We must take the actual c.i.f. price.

Mr. Peterson.—Yes. You have had very good instances as regards imports both from the Continent and England.

Dr. Matthai.—What is your latest information?

Mr. Peterson.—The International Rail Makers' Association is practically re-formed.

Dr. Matthai.—I think that there must be a lot of differences between France and Germany.

Mr. Peterson.—France is objecting. As far as I can see it will certainly be re-formed. The result will probably be an increase in price and not a reduction.

Mr. Mathias.—Do you think that the tendency will be now either for prices to stabilise or to increase?

Mr. Peterson.—In a recent report I notice a rise in the price of wire products in Belgium.

(*b*) *General.*

President.—I propose now to go through your representation in so far as it may not have been covered by the questions we have already put. In paragraph 4 you say. "So far as we have been able to ascertain, the

figure of Rs. 26·67 is approximately that which experience has shown to be necessary in other countries, where in good years a profit of £2 per ton which in bad years may drop to £1 per ton is usually expected." We don't know about this £2 and £1.

Mr. Peterson.—That was taken from an analysis of certain American plants over a considerable period. I have not got it here. I can put it in if you like.

President.—We found in the last enquiry that the difference between the works cost and the selling price was so small that it never came anywhere near a £. Leave alone £2 in America.

Mr. Peterson.—It depends on what is included in the works cost. They include depreciation in the works cost.

President.—We found that the difference was a few shillings.

Mr. Peterson.—Mr. Alexander is still of the same opinion. Depreciation alone would amount to that.

President.—I took particularly the question of rails during the first enquiry and I found that the difference was about $ 2 and it was explained that on the rails they made a very small profit and then I took billets and there I found the difference was about the same. What I want to point out is that this statement is not supported by American figures as far as we had them then. Obviously it could not be so much for one reason. The block value will always be smaller in the United States per ton than in India.

Mr. Peterson.—There is pretty wide margin between £1 and £2. That is just a general statement.

President.—You call £2 normal.

Mr. Peterson.—In good years.

President.—We are taking Rs. 26·67 as the profits of a good year. I am trying to point out that it cannot be the same for the simple reason that the capitalisation per ton would be very much higher here necessarily than in those countries.

Mr. Peterson.—Do you mean the capitalisation per ton of finished product?

President.—There the money is cheaper to start with. The value of the plant is less. However it is not of much consequence.

Mr. Peterson.—The American capitalisation is between £12 to £23 as against our £16.

President.—That is a big difference.

Mr. Peterson.—That is a difference between different plants in the same country.

President.—What is yours?

Mr. Peterson.—About £16 to £17.

Dr. Matthai.—We can't build anything on that.

Mr. Peterson.—We can't.

President.—Having regard to the fact that the machinery and other things are more expensive here and money is dearer the profit in this country would have to be higher.

Mr. Peterson.—Yes.

President.—In paragraph 9 you have given a statement showing the actual costs for the month of March 1926. Compared to last year the March figures are better.

Mr. Peterson.—Much better than the average of the year. The last month would always be better than the average of the year, because the plant is steadily improving. April figures would probably be better than March. June and July will be slightly worse, because of climatic conditions. The figure for March 1927 will be better than the average of the year 1926-27.

President.—It is getting more difficult. We shall have only got three or four months' results before we report. However we can't help that.

In paragraph 10 you say that you would be satisfied with a works cost of Rs. 100 per ton for all finished steel including sheets. Of course you would be satisfied if you included sheets in it because sheets cost considerably more.

Dr. Matthai.—If you include sheets, it would be Rs. 103.

Mr. Peterson.—It would be about Rs. 109.

President.—It was estimated in 1923 at Rs. 106·46 and the actual cost for March 1926 was Rs. 107·61.

Mr. Peterson.—Yes.

Dr. Matthai.—But your average works cost including sheets which would correspond to average works cost of Rs. 100 excluding sheets would not be so high as Rs. 109.

Mr. Peterson.—It was that. Rs. 115 is the average for all steel for 1925-26.

Dr. Matthai.—If you excluded sheets in 1925-26 it would be Rs. 100. I want you to give me a figure as regards your future costs which would correspond to Rs. 100 excluding sheets in 1925-26.

President.—That would depend on the quantity of sheets rolled, would it not?

Mr. Peterson.—It would depend on the quantity of sheets rolled. I am merely following the method adopted by the Board. I don't say that it is an accurate method.

President.—From the way in which it is put, it rather under-estimates the fact that the inclusion of sheets raises your general costs by about Rs 8 or Rs. 9 per ton.

Mr. Peterson.—We have gone into the question of works costs in detail.

President.—If you excluded sheets, your average works costs would be much less.

Mr. Peterson.—We would not be satisfied with Rs. 80.

President.—I am dealing with this statement in the representation which requires qualification. All along you have taken Rs. 100 as your average works costs. There is this fallacy in it that it includes sheets.

Mr. Peterson.—I have explained that later in the representation.

President.—If you include sheets at any time, the average costs would be much higher.

Mr. Peterson.—I am merely copying the report of the Tariff Board. I had to compare with something. The Board said that at a certain period the average price excluding sheets would be Rs. 100. I have copied that phrase and said that we have obtained that two years earlier, that is all I have done.

Dr. Matthai.—Please look at page 21 of your memorandum. About the middle of that page you say "Supposing that ten years is accepted we have at the commencement of this period in 1927-28 a works cost for all steel of Rs. 103·76", and then you say in paragraph 28 of the same representation "In five years from 1927-28 the average annual margin to this Company will be as follows".

Mr. Peterson.—We have taken there Rs. 100 as the average cost for 5 years from 1927-28.

Dr. Matthai.—If you take these two statements together, it will appear that you have put Rs. 103·76 to correspond to Rs. 100.

Mr. Peterson.—Rs. 103·76 is the cost for 1927-28 and Rs. 100 is the average for 5 years from 1927-28.

Mr. Mathias.—Actually you have taken Rs. 100 as the basis for your calculations right through.

Mr. Peterson.—Yes.

President.—And you have always included sheets.

Mr. Peterson.—If you want it excluding sheets we will have to alter the figures. I am merely following the method adopted by the Board.

President.—But you put this very thing before the Board.

Mr. Peterson.—No, I criticised it at the time.

President.—Let us be quite clear as to what we are about.

Mr. Peterson.—You arrived at a cost of Rs. 100 excluding sheets.

President.—The figures were supplied by you. We simply worked on those figures.

Mr. Peterson.—You did a good deal of calculations on our figures.

President.—For that reason, the whole of this representation follows a somewhat wrong basis. Having included sheets you increase the measure of protection by a good few rupees.

Mr. Peterson.—Not necessarily. I have separated it out later—see pages 22 and 23 of this representation.

Mr. Mathias.—Does it not mean that your other proposed duties are heavier than they would be if you excluded your sheets altogether?

President.—That is the point. The additional duty you propose in the case of corrugated sheets is Rs. 40 per ton and in the case of rails also it is Rs. 40 per ton. Therefore the whole measure of protection goes up.

Mr. Peterson.—Rs. 40 per ton is in addition to the existing duty on rails.

President.—So is the other.

Mr. Peterson.—The present duty on rails is only Rs. 14 and the duty on corrugated sheets is Rs. 45. The total would eventually be Rs. 54 against Rs. 85.

Mr. Mathias.—I suggest that perhaps owing to the fact that these corrugated sheets are used by comparatively poor people it is considered desirable to keep the duty down fairly low with the result that the proposed duties on the bulk of your production are pitched too high.

President.—We agreed yesterday that so far as these calculations as regards the average works cost of all steel were concerned, we should exclude sheets altogether.

Mr. Peterson.—That would alter the calculations right through.

President.—It would substantially alter the figures. Please look at the statement on page 4 of your representation. If you take the March cost, the difference is marked. If you include sheets, it is Rs. 107·61. If you exclude sheets and take the average of old and new mills it is Rs. 97·34, the difference being Rs. 10. If you take the average of new rails and bars, it is only Rs. 91·45.

Mr. Peterson.—Yes.

President.—It may be some figure between Rs. 91·45 and Rs. 97·34.

Mr. Peterson.—The actual figure is Rs. 97·34. These figures are actuals and not estimates.

President.—We can take this average Rs. 97·34; that is one way of dealing with it, we may take Rs. 91·45 or we may take an intermediate figure between the two. Whichever figure you take, your having included sheets will affect the calculations.

Mr. Peterson.—It makes a considerable difference, but that is the method you originally adopted.

President.—For that reason I don't propose to go into your other estimates as much as I should have done.

Mr. Peterson.—The important estimate is at pages 32 and 33 of this representation for each product.

President.—Would you agree so far as that paragraph is concerned?

Mr. Peterson.—That paragraph is merely intended to compare the estimates made by the Tariff Board with the actual results. We have given you an estimate for each product separately for each year.

President.—The distribution of these duties is the most important thing.

Mr. Peterson.—That is a matter for the Board. We can only make suggestions.

President.—As you have included sheets, it vitiates the whole calculation. What is the idea of the table given in paragraph 14 of your representation?

Mr. Peterson.—To show that protection has so far resulted in payments being made to railways, to Government, to debenture holders, to banks and to other people and that capital got practically nothing.

President.—That you can prove from the fact that you have made so little profit.

Mr. Peterson.—It is interesting I think to see that in this industry labour has received 146 lakhs whereas dividends paid to shareholders amount to only Rs. 4½ lakhs.

President.—It is interesting from another point of view that Government, public bodies and railways have benefited by the scheme of protection more than you have done.

Mr. Peterson.—That is the object of this statement.

President.—As regards the price of coal you say in paragraph 17 "we have assumed that the price of coal which is at present Rs. 5 per ton f.o.r. colliery for 1926-27 will rise to Rs. 6 per ton in 1927-28 and to Rs. 7 in 1928-29 and will remain at or about that figure." I thought that it was always understood that you were to take Rs. 6 as the average on a smaller consumption.

Mr. Peterson.—If you take the saving of fuel into account, that is correct.

President.—In paragraph 18, you give a table which is intended to show the prices likely to be realised, as estimated by the Tariff Board in the last enquiry.

Mr. Peterson.—It is simply a table taken from your report.

President.—It is no use showing your standard price. You cannot now expect to realise Rs. 180.

Mr. Peterson.—I fear not.

President.—I am only pointing out to you that that was the original estimate. We went wrong so far as the estimate of your price was concerned.

Mr. Peterson.—That is what is directed to—and not the price that we ought to get.

President.—That of course is very largely due to the fluctuation in the exchange.

Mr. Peterson.—Almost entirely.

President.—When the Board expected you to realise an average price of Rs. 145·41 you got only 127·89.

Mr. Peterson.—Yes.

President.—May we take it from you now that so far as you are concerned you are prepared to assume that the average foreign price for the future will at least remain somewhere about the point it has now reached?

Mr. Peterson.—There is one proviso and that is regarding the depreciated exchange. In a country with a gold standard basis.....

President.—Supposing we take the continental price apart from the question of exchange?

Mr. Peterson.—That is what I mean by the gold standard basis. Take France, for instance. If the franc falls as low as 500.....

Dr. Matthai.—Don't you attach some importance to the fact that so far as Germany is concerned cartel organization is giving way to trust organization? Cartels put up prices, trusts bring down prices.

Mr. Peterson.—There is a physical point beyond which you cannot lower prices. There must always be some limit. 85 to 80 per cent. of finished steel is labour really. Taking it right through I don't see how labour is going to accept any lower wage and continue to exist.

President.—So far as British prices are concerned you say they may be safely assumed to remain somewhere about the present price?

Mr. Peterson.—Yes, they cannot go down, unless the industry shuts down altogether.

President.—In paragraph 20 you are trying to show that after ten years India will be able to purchase its rails at a price which will represent the British price *plus* the freight and the revenue duty.

Mr. Peterson.—Yes.

Prsident.—If you include the revenue duty it is doubtful whether you fulfil the conditions laid down by the Fiscal Commission.

Mr. Peterson.—Revenue duty already existed before they made their recommendations.

President.—Revenue duty may be taken away at any time. The Fiscal Commission has laid down the condition that you must be able to do without protection; they don't say whether revenue duty is protection or not. But they cannot be treated as protective duties because they can be taken away at any time, so that if you are not able to obtain better results than that it may be said that you will still require protection even after ten years.

Mr. Peterson.—All this is true theoretically. But it all depends on the future course of prices. I cannot really say what the position is going to be ten years hence.

Mr. Mathias.—Do you consider any further reduction in the works costs can be made after 1933-34?

Mr. Peterson.—Very likely. But we cannot say that. That is so far as we can see at present.

Mr. Mathias.—So that it is not actually the rockbottom works cost you have got down to?

Mr. Peterson.—No, I don't think so. We would probably be reducing it after 1933-34.

Mr. Mathias.—So that your opinion is really as to the date at which you will be able to do without protection, not as to the fact?

Mr. Peterson.—There is the effect too; effect and the date.

President.—You would have been on a much stronger ground on an argument like this. In 1923-24 when we reported we took the c.i.f. landed price of rails at Rs. 140 a ton and the revenue duty was put at Rs. 14; that is a total of Rs. 154. Let us see what you have done since. If you take your March works costs, say, at Rs. 86 on the new rail mill and even if you add your full Rs. 57 that gives you a price of Rs. 143 against the c.i.f. price of Rs. 140. That is the kind of result you have got to show in the end.

Mr. Peterson.—The difficulty here is to say what the price is going to be not what the works cost is going to be and what the production is going to be. I would like to say this that the estimate of prices may be wrong. Any estimate made on that by anybody is certain to go wrong. But, it would be no use my telling you that we would be able to stand without protection unless I can adduce facts to show it. I think the great reduction in costs already obtained does show it.

President.—You have included the old bar mill even in 1933-34. It is really absurd. There must be a limit to that.

Mr. Peterson.—Somebody may come and say we want 100 tons of a certain section to be rolled in a hurry and they are prepared to pay a very much higher price. Here we have a mill on which we can do it and give him the thing he wants.

Mr. Mathias.—Would you use it for anything else?

Mr. Peterson.—No, simply keep it as a jobbing mill.

(Continued on the 25th June 1926.)

Anti-dumping Legislation.

President.—As regards paragraph 21 we have discussed at some length this question of " anti-dumping " legislation. I may point out to you that there are difficulties in the way of having purely anti-dumping legislation. There are legal difficulties which we dealt with in our Supplementary Report, so far as Germany was concerned there was no commercial treaty in existence. As regards Belgium three months' notice might do, but as regards France we expressed the opinion that the French Commercial Convention of 1903 was an absolute bar to any scheme which would discriminate against steel imported from France. That being the position what alternative proposal do you make?

Mr. Peterson.—The Fiscal Commission omitted to notice this point in their report.

President.—The Fiscal Commission were not concerned with the legal aspect of the question, nor are we for that matter. But we cannot ignore a fact that we happen to come across. In practice let us see how it works. Anti-dumping legislation implies that you have to name a particular country and put an anti-dumping duty against that country. If you exclude France it means that the whole thing would fail.

Mr. Peterson.—It would.

President.—Therefore, as far as I can see, unless our view is quite wrong, any scheme we propose must proceed with a sort of combination of two duties, the first a general duty and the second an offsetting duty to start with. As it happens Great Britain is the only competing country where the exchange is stabilized.

Mr. Peterson.—That is not barred by.....

President.—Either you have got to exclude all other countries or not exclude any at all.

Mr. Peterson.—You must connect the three countries, Germany, France and Belgium. It seems to me to be a differential duty, in effect giving preference to Great Britain. If that is not a breach of the convention, I don't see why action cannot be taken against each country separately.

President.—France cannot say one part of the Empire should not give preference to any other part.

Mr. Peterson.—That I think is admitted.

President.—I mean to say in form it may have to be done in that way though in substance it is really a provision against dumping.

Mr. Peterson.—If you use anti-dumping legislation against Germany and Belgium and leave out France, French steel will come from a Belgian port. In fact the French steel comes from the port of Antwerp now.

President.—Supposing we put it against Belgium and Germany the steel might come from a French port. So that either you have got to get out of the convention which is a much more difficult question, or we can only suggest that this is the way to do it, and the Government of India must find out how best they can do it.

Dr. Matthai.—This anti-dumping problem arises in India not only with regard to steel but with regard to other things and therefore I think if Government is to undertake anti-dumping legislation the whole position will have to be surveyed comprehensively.

Mr. Peterson.—It seems to me that you would not get the whole field surveyed comprehensively unless you take up a specific subject and examine it.

President.—But is it necessary for the purpose merely of getting over a general objection like that to postpone doing a thing when it can be done without any alteration in the system? I mean as a practical proposition why should India wait until all the conventions have been revised?

Dr. Matthai.—The problem with which we are concerned is this. The policy administered by the Tariff Board assumes that there is a certain amount of fiscal freedom in this country. Our commercial conventions often rest on a different idea. We are up against a serious problem really.

Mr. Peterson.—Supposing you recommend anti-dumping legislation, it is for the Government of India to consider how they can give effect to it.

President.—We may just recommend this course to the Government of India.

Mr. Peterson.—My point is that they cannot start too soon. They have it already in Australia.

President.—In this case the problem is very much simpler because, as I said, the only competing country happens to be the United Kingdom. America does not matter at present. If it became the question of America it is difficult to see what the position might be.

Mr. Peterson.—Our greatest complaint has been against England; dumping has been going on steadily for the last three years.

President.—The most serious complaint after all is the depreciated currency and that is what has led to the previous enquiries for supplementary protection chiefly. Then the only alternative is to do as before and Government may increase the duties or pay bounties until the whole question is settled by a revision of commercial treaties.

Mr. Peterson.—Yes, if this convention prohibits any anti-dumping legislation?

President.—These views have been put before us and it is not for us to say whether there is anything to prevent Government from adopting the course we propose. We cannot ignore, however, the existence of a fact which has come to our notice.

Mr. Peterson.—I don't know how the Fiscal Commission has dealt with this question.

President.—As regards these anti-dumping duties levied in other countries, has any country been deterred from imposing anti-dumping duties as far as you know because of administrative difficulty in detecting fraud on the revenues?

Mr. Peterson.—I don't know of any case.

President.—Australia or Canada, South Africa or the United States?

Mr. Peterson.—Australia put them on at once.

President.—Even when they found that preference was not working satisfactorily, they did not withdraw it, did they?

Mr. Peterson.—In Australia they did alter it slightly.

President.—They imposed conditions to make it more effective.

Mr. Peterson.—Yes.

President.—They didn't say they would waive their policy of Imperial Preference.

Mr. Peterson.—They imposed a condition that 75 per cent. of the material should be of British manufacture.

President.—Therefore the point is that these difficulties did not prevent any Government from enforcing the principle.

Mr. Peterson.—I think so.

President.—Then as regards the question of British rails being sold at a smaller price for export than at home, I don't thing we need go into that.

Mr. Peterson.—No. Not if you deal with that as already suggested.

Mr. Matthai.—In your note on protection against imports from countries with depreciating currencies, you suggest that the duty ought to vary according to the variation from the gold par. Supposing we gave you protection with effect from 1st of April 1927 with reference to the prices that then existed, then the extent to which particular currencies varied from the gold par at that time would have already been discounted.

Mr. Peterson.—For any further variation?

Dr. Matthai.—For any further variation, we might base the scheme on the extent to which the exchange varied from the rate that existed then.

President.—From your point of view is there any objection to having the off-setting duty to start with?

Mr. Peterson.—I don't see any objection to that, but I should like to examine it on principle just to see if there were any objections and what the variations should be. I will give you evidence when you come to Jamshedpur on that. In the meantime I want to find out exactly how the British steel comes into the country and in what shape.

Dr. Matthai.—Would you consider it sufficient if we said that these off-setting duties would operate if the variation amounted to more than 25 per cent.?

Mr. Peterson.—Do you mean the variation in the exchange?

Dr. Matthai.—Yes, from the date on which the report comes into force.

Mr. Peterson.—Some provision of that kind is necessary. We want to know the quantities and the amount of variation intended.

Dr. Matthai.—Have you any idea now? Supposing I suggested 25 per cent., would it be considered reasonable?

Mr. Peterson.—25 per cent. depreciation from the gold standard, or 25 per cent. fall in price.

Dr. Matthai.—Supposing you get a duty from 1st April 1927 which takes into account all the variations which then existed.

Mr. Peterson.—Let us suppose the French franc is 200 to the pound sterling. What is the suggestion? If it becomes 225, the off-setting duty comes into operation?

Dr. Matthai.—Not 225 but 250.

Mr. Peterson.—Would the duty be on a sliding scale as we suggest? I think that would probably be sufficient.

President.—In that case whilst there is this fluctuation and prices are being affected, the burden falls on the industry.

Mr. Peterson.—Yes, it would, until the off-setting duties came into force.

President.—As regards paragraph 22, I think we have gone into that in various forms.

Mr. Peterson.—These are merely arithmetical calculations which have already been considered in the evidence.

President.—Take again your average works cost for all steel including sheets. Paragraph 24 is of great importance. I want to know precisely what your complaint is against the scheme. First take the Tariff Board's recommendation.

Mr. Peterson.—Which scheme?

President.—You are dealing with the scheme of protection, how it failed and so on.

Mr. Peterson.—Do you mean the original scheme?

President.—Yes. First of all you say:—

> "It is at least doubtful whether the trade and industry of the country have not suffered more from these perpetually recurring enquiries with the consequent reaction on imports and prices than it would have, had the original scheme of protection been so generous as to ensure an adequate margin of safety."

Mr. Peterson.—That is merely an expression of our opinion.

President.—You are entitled to express it. We should welcome it. We don't mind if you pointed out in what respects you considered the scheme was defective, because it is our duty to see that these mistakes do not happen again.

Mr. Peterson.—I think too little margin was left for contingencies that could not be foreseen.

President.—That is to say, in making our calculations we took it for granted that the prices would remain in the neighbourhood of what we had taken.

Mr. Peterson.—It is entirely a question of the estimated price. I think there was one mistake in the original scheme which was the system of bounties on rails supplied to the Palmer railways. It omitted to notice the fact that in the last year of the scheme the railway contracts ceased and the Company was therefore left without protection so far as those supplies were concerned.

President.—We shall deal with it generally.

Mr. Peterson.—The third point I would take is the rejection by the Government of India of the recommendations of the Tariff Board in their 3rd Report.

President.—So far as the original scheme was concerned, what you say appears to be true.

Mr. Peterson.—I am not criticising the original scheme.

President.—You can criticise it as much as you like. I simply want to understand what sort of mistakes we have made which we might have avoided.

Mr. Peterson.—I don't think the mistakes could have been avoided.

President.—You must remember that our scheme contained a provision that when protection became ineffective Government should take action to remedy it.

Mr. Peterson.—Yes.

President.—Coupled with that provision do you think the scheme was inadequate?

Mr. Peterson.—As I say there was a mistake in the rail bounty. That was an under-estimate. I think there has been too much endeavour to fix the margin of price and fix the limit. There was too much desire to see that excessive profit was not made by the industry. That is all the criticism I have to make about the original scheme, but as regards the way in which the scheme was applied.....

President.—Let us see what your complaint is as regards that. Let us proceed in the chronological order.

Mr. Peterson.—If I am asked to criticise, I would say the Government of India acted too slowly on the first occasion.

President.—You cannot say that they acted slowly considering the fact that the Act came into force in June and we were busy with the next enquiry in September. You cannot say that there was such an abnormal delay.

Mr. Peterson.—The result was not decided until February.

President.—It was applied with retrospective effect.

Mr. Peterson.—The result was that the Company very nearly ceased to manufacture in December. It was almost a question of weeks.

President.—Because of what?

Mr. Peterson.—Because of the sudden fall in profit. It could not make any profit. Stocks were mounting up and we could not sell. That was what actually happened. I doubt very much if there was one person in 500 in Bombay who believed that the Company would continue after December 1924 and that situation was brought to the notice of the Government of India. The complaint I have is against the system. When an emergency arises from a depreciated exchange, the system devised does not operate quickly enough to meet it.

President.—In a system where you have got to pay enormous bounties it does lend itself to greater difficulties than where a duty is imposed and no bounty becomes necessary.

Mr. Peterson.—It is very difficult, I admit.

President.—The point was that the bounties in that particular instance must have been to you of far greater advantage. The duties would have taken time to become effective.

Mr. Peterson.—If the Government of India had taken immediate action without making any further enquiry as soon as the exchange went up, it would probably have been more to our advantage.

President.—You forget that there were heavy stocks at that time.

Mr. Peterson.—I know. The real point was this—that the Indian public and our own creditors—everybody concerned was firmly convinced that the Government of India did not intend to carry out this policy. I am one of the few people who didn't believe that the Government did not intend to carry out this policy. What was wanted was a declaration by Government that they intended to enforce the scheme and that declaration they didn't make until January. The only complaint I have against the scheme is that necessary protective measures were not taken or announced quickly enough.

President.—The delay you consider was partly due to the necessity of further enquiries.

Mr. Peterson.—We want executive action to be taken immediately.

Dr. Matthai.—If the Steel Industry Protection Act stands with the provision of off-setting duties working automatically, in that case you would have no complaint.

Mr. Peterson.—None. It was the uncertainty of what Government meant to do. What actually happened was that within a week of the passing of the Act, it was of no value. The rise in exchange had completely extinguished the value of the duties.

Mr. Mathias.—With the off-setting clause in the Act do you consider that it would have been more effective if provision had been made for constant scrutiny of the prices of imported steel by some competent authority who should report to the Government of India what action they should take?

Mr. Peterson.—That was the original proposal we made, I think. I am merely repeating a criticism which has been made in one of the Reports of the Tariff Board.

President.—You need not apologise for making any criticism. It is essential that we should know. I thought that we had made a reference to this factor of exchange somewhere.

Mr. Peterson.—In the 1st Report.

President.—We said: "We have taken the prices in paragraph 45 (at Rs. 15 to the pound sterling) as the basis of our recommendations. They are above the lowest figures at which steel has actually entered India in the last two or three years, and it is quite possible that they may again fall to the same level. Should such a relapse occur and persist for any prolonged period the situation must, we consider, be dealt with by the exercise of the special powers which we have proposed should be conferred on the Government of India." We were constantly alive to that.

Mr. Peterson.—See also page 83 of the same Report.

"(12) Except in the case of sheets, the proposals made for the imposition of duties, or the grant of bounties, approximately bridge the difference between the two prices. If, owing to a fall in the price of imported steel, the duties no longer give adequate protection, additional or off-setting duties should be imposed, and the Government of India should take powers by legislation to impose such duties." That was in the original scheme. In actual practice what happened was that although the situation arose before the Act was passed, it was nearly 8 months before the Government of India took action.

under this section. Under the scheme as it was worked no variation could be made except after a further reference to an enquiry by the Tariff Board and a fresh decision by the Legislative Assembly. That seems to be the weak part

Mr. Mathias.—There is nothing in the Act to that effect.

Mr. Peterson.—But that was what actually happened.

President.—Take for instance the next scheme. We are reporting in October—we hope to anyhow. The scheme does not come into operation in any event before the 1st April 1927. If there is a variation in the prices, after we submit our recommendations, then unless the Government of India takes action on its own initiative under that provision practically we may have the same defects as we had the last time. Therefore, from that point of view, would it not be better if the scheme itself proceeded on these two duties, *viz.*, the basic duty and the off-setting duty? When the legislation is put forward before the Legislative Assembly, if the Government of India find that the off-setting duty should be increased, it can increase it without any difficulty.

Mr. Peterson.—Any automatic system of that kind is better.

President.—What I am suggesting to you is supposing we recommended Rs. 15 as the ordinary duty and Rs. 10 as the off-setting duty which would vary according to circumstances instead of consolidating the two as before, and if, on introducing legislation, the Government of India found that the exchange, for instance, had gone up, it could make the off-setting duty go up by the amount of the difference made by the exchange. If that was possible . . . . . .

Mr. Peterson.—If that was possible, there was nothing to prevent the Government of India adopting the off-setting duty under the Act.

President.—At that time, according to its own declarations the Government of India had to take action on the Report of the Tariff Board. The Report of the Tariff Board did not make any provision for a contingency like that. You cannot blame the Government of India for having acted on the Report of the Tariff Board.

Mr. Peterson.—That was the intention of this proposal you made. You said: "If, owing to a fall in the price of imported steel, the duties no longer give adequate protection, additional or off-setting duties should be imposed, and the Government of India should take powers by legislation to impose such duties." That does not necessarily mean a fresh reference to the Tariff Board and a fresh reference to the Legislative Assembly. That is my point.

President.—Your complaint is that they should have proceeded without any formal enquiries.

Mr. Peterson.—My suggestion really goes deeper than that. If you propose to protect the industry, you must keep a sufficiently wide margin and if you are giving too much you are erring on the right side. That is the difference between my views and the views which have been expressed right through the application of this measure of protection that it must be ensured that the industry must not make more than a certain amount of profit. If you ask my opinion on the subject I can only say that I entirely disagree with that.

President.—It depends on how you look at it. Supposing the margin of profit was liberal, you could not adduce that argument. Your argument really is this—"make the margin so wide that delay does not matter."

Mr. Peterson.—If the margin is liberal from the first I agree with you, but that liberal margin depends on the estimate of price which is practically an impossibility.

President.—Supposing we devised some machinery by which prompt action could be taken?

Mr. Peterson.—I would prefer to do it from the start and correct it afterwards in the other direction because if you correct it from the other direction it is always possible to recover the excessive profits from the industry. But if the industry is destroyed, as very nearly happened in 1924, no amount of protection will revive it. That is a real danger to be guarded against, especially with a new works coming in.

President.—There may be no reserves.

Mr. Peterson.—There is nothing to fall back upon. If they come up against a period of six months such as we experienced in 1924, they go out of business. Once they go out of business, it would be years before they operate again.

Dr. Matthai.—Taking that particular case, when your business was passing through a very great crisis in December 1924, you admitted that if the off-setting provision had been carried out by Government in the form in which it stands in the Act, that crisis could have been got over.

Mr. Peterson.—Yes.

Dr. Matthai.—So far as your actual experience goes, the off-setting provision would have been quite as effective as a liberal margin of safety.

Mr. Peterson.—I think so. From my own experience I know also how difficult it is for Government to move in a matter of that kind.

President.—The United States Government can move in five minutes. They get a cable from India that pig iron which has been given a bounty has been exported and even before it reaches there, you may find yourself up against the anti-dumping duty.

Mr. Peterson.—Our pig iron is taxed on the water.

President.—You say on page 18 of your representation: "If adequate protection is afforded to the Steel industry for a sufficiently long period and reasonable profits are earned by the capital invested in it, the conditions in India are such that several plants of the size of our own would probably be started and the internal competition resulting would reduce the cost of steel and the price to the consumer far more rapidly and more efficiently than if one Company only is kept alive in a condition which does not enable it to pay more than one per cent. on the capital invested in it." I think that is begging the question.

Mr. Peterson.—I have put it too strongly but that is the experience of the last two years.

President.—Before the war, the total import of steel into India was 1,220,000 tons. Now it is 861,000 tons.

Mr. Peterson.—Yes.

President.—That shows it is possible for one more steel works to be built here.

Mr. Peterson.—At present, yes; but in ten years the consumption may be double. If we could reduce the price of steel as I should expect to see it reduced, it might treble. There is great opportunity for the use of steel in India.

President.—We cannot say that we are very soon likely to reach a state when the internal competition in itself will bring down the price. What may bring down your price is that your practice may improve and costs may go down generally.

Mr. Peterson.—What I personally expect—here I am giving my own opinion entirely—to see eventually, say, within a period of 25 years or slightly longer, is that India will be exporting steel and the competition between the various plants established in the country which would depend for their existence on export, will force down the internal prices just in the same way as we have forced down to-day the internal price of pig iron.

President.—It is not the internal competition which is going to do it but the external competition.

Mr. Peterson.—Yes, the external competition.

Dr. Matthai.—Supposing the Steel Industry gets protection—let us say for 10 years.

Mr. Peterson.—At present the steel price in this country is decided by the steel price in some other country *plus* the cost of bringing it to India. It

depends on world prices *plus* freight, handling charges and the rest of it. When India gets into the position of an exporting country with a big steel industry of its own, the price will depend on the cost of manufacture in India and not on world prices.

Dr. Matthai.—If we gave protection for a period of 10 or 20 years and if no other steel making concern came into existence, so long as protection existed, the price in India would be determined by foreign competition.

Mr. Peterson.—Still by world prices.

Dr. Matthai.—World prices, *plus* the cost of transport *plus* the tariff.

Mr. Peterson.—Quite correct.

Dr. Matthai.—After that period, supposing the Steel Industry so develops that two or three more steel units come into existence, then the competition amongst themselves will bring down prices below this level. Till you have reached that stage, so long as the period of protection lasts, the Indian prices will be higher than the world prices.

Mr. Peterson.—Yes, until India gets to the position of an exporting country.

President.—If India becomes an exporting country, the price in India may be higher.

Mr. Peterson.—It would be slightly but not so high as now. If we don't take advantage of the lower price, some other concerns will take advantage of it and sell at a lower price.

Mr. Mathias.—Then, of course, you have internal competition.

Mr. Peterson.—Yes.

Mr. Mathias.—You may combine to push the price up.

Mr. Peterson.—We still have a price arrangement between the three different companies as regards pig iron, and the price is not pushed up to anything like the price of imported pig iron. I think that the Indian price is Rs. 10 or Rs. 12 below that. The experience of most of the big trusts is that prices are lowered and not raised.

President.—Then, you put your argument on the ground of the importance of the industry for purposes of national defence.

Mr. Peterson.—Yes.

President.—In paragraph 25, you make a statement that "India is to-day paying a price of £6-5-0 for rails as compared with the English and American prices." I do not see it stated anywhere.

Mr. Peterson.—This is the price at which I understand rails were supplied. That was the information I got. That may be incorrect but it will be within 5 shillings.

Mr. Mathias.—£6-5-0 f.o.b.?

Mr. Peterson.—Yes.

President.—Your contention is that in any case India cannot expect to produce its rails cheaper than the United States for domestic purposes?

Mr. Peterson.—Yes. I don't see why it should complain of having to pay this price of $43 for instance. If it is necessary for the American steel industry, which has been in existence for such a long time and which is the best example of industrial development in the world, to obtain 43 dollars for her rails, you cannot expect the Indian industry to live on a price of this kind.

President.—Your point is rather this that an industry, which can enable the country to purchase rails at a price which is not considered unreasonable in more advanced countries, has not done so badly; is that it?

Mr. Peterson.—That is the point really, and it has a right to complain if the country buys elsewhere at a much lower price than what prevails in the home market of that particular country.

President.—Paragraphs 26 and 27 deal with the period of protection.

Mr. Peterson.—I have considered the period of protection solely from our point of view except that I have said that in the case of a new industry it should be fixed for a longer period.

President.—If the duties have to vary it means that you cannot do without protection. Is not that in substance the effect? Take the United States for instance. They kept their duties for a long time.

Mr. Peterson.—That is a fact.

President.—I don't understand this argument about the period.

Mr. Peterson.—My argument is that the period should not be less than a certain specified period.

President.—If you say it is not to be less than 10 years, then if a man wants to come into the industry he would wait for two or three years to see how you had done. I am just trying to point out the difficulty of fixing a period. Then he says after three years: "This company is doing well. I am going to be busy and start a new company." He takes a couple of years before he can raise the capital. Then it takes another five years to start steel making. By the time he begins he finds there may be no protection and he does not know if protection is going to be continued and there is no inducement.

Mr. Peterson.—That is correct.

President.—If you say 25 or 30 years that is another matter, but in that case it would be just as well not to fix any period.

Mr. Peterson.—Yes.

President.—If you fix the minimum period for ten years and if the industry takes ten years before it commences to give any result, is it any good?

Mr. Peterson.—I am afraid there has been a certain amount of confusion in my own words. What I mean is that the scale of protection should not be altered for ten years.

President.—That is to say, the minimum amount of protection the industry ought to get should be fixed for 10 years.

Mr. Peterson.—Yes, for not less than that period.

President.—And then it may be varied?

Mr. Peterson.—That is the only inducement. He must know that a certain specific protection has been guaranteed to him for a period of 10 years and that, therefore, once the principle has been accepted it would be followed, but the scale of protection may vary.

Dr. Matthai.—Supposing we gave a particular scale of protection to take effect from the 1st April 1927 and we say that that scale will last for 10 years. We say nothing about the principle; we simply say that there is the scale. At the end of that 10 years we make an enquiry into the scale of protection and as a result of the enquiry we find that the scale may be reduced to zero. Then the principle of protection also goes.

Mr. Peterson.—The principle of protection for that particular industry goes.

Dr. Matthai.—What I am suggesting is this, that this clear cut distinction between the continuance of the policy of protection and the scale of protection is somewhat meaningless. If you say that the scale of protection lasts for 10 years you give practically the same impression to a businessman as you would if you said that the principle of protection is accepted for ten years.

Mr. Mathias.—The principle of protection will continue. If further protection is needed by an industry after 10 years, the scale only has to be decided.

Dr. Matthai.—I am looking at it from the investor's point of view. A certain scale of protection is given from 1st April 1927. You say if necessary it will continue for a period of ten years. If Government says at the end of ten years there is no necessity, then after ten years there is no protection.

What difference does it make to me as an investor, this distinction between the scale of protection and the principle of protection?

Mr. Peterson.—What I suggest is that it should not be less than for a period of ten years.

President.—If you look at paragraph 32, Chapter III of our First Report you will find that we make the point perfectly clear. We say: "Precisely for this reason it is important that the policy should be clearly laid down. Unless protection is adopted as the result of a deliberate decision of Government and the Legislature to encourage the development of the steel industry in India it will not be easy to enlist fresh capital in the business. The capitalist must look for an assurance that protection will be continued to the extent necessary for the full period which must elapse before anticipations can be tested by results. From the date when a new firm decided to establish steel works, five years would probably elapse before steel was actually manufactured and another five years before the success or failure of the venture could fairly be estimated. In these circumstances continuity of policy is essential and it seems to us desirable that the policy should be clearly declared in the preamble to any legislation which is undertaken." Is it necessary to go further than that? We do not say that after ten years no protection will be continued. The point is that the country must declare that this industry if it gets protection shall get protection so long as it needs it. If that policy was declared and effect was given to it from time to time, would not that be sufficient assurance to the investor?

Mr. Peterson.—Yes.

President.—Then, as I said, as regards the period, if it is going to be a period of ten years, it seems to me that no new works may be able to come in.

Mr. Peterson.—Possibly you are right.

President.—If it takes five years to put up a plant and another five years to obtain results, the new investor must start immediately on the publication of the scheme. Is it a practical proposition?

Mr. Peterson.—I think if protection was assured for ten years, considering the preamble of the Act and these reports, capitalists would probably consider the possibility of erecting a plant.

President.—But he must make up his mind within two or three years.

Mr. Peterson.—I think they would.

President.—It seems to me that if there is going to be any period it should have much fuller consideration than this.

Mr. Peterson.—Probably yes. You will notice that I have said ten years at the least. I have qualified the point.

President.—In paragraph 27 you say: "It would be much more satisfactory to set now the standard of protection that will be adhered to to a reasonable period and to leave private enterprise and competition to level the results if these are unfavourable to the consumer and too favourable to the industry." Then you go on to say: "A mistake in the latter direction is hardly probable and if one does occur, this could be corrected by special taxation as has been pointed out by the Board." I would like to know in what form you are going to give effect to that special taxation.

Mr. Peterson.—By an ingot tax. You can put a tax on the ingot production.

President.—Won't it be a sort of deterrent to anybody who wants to come in?

Mr. Peterson.—When he is expected to make an 8 per cent. profit I see nothing objectionable in Government recovering that.

President.—Supposing you become a powerful steel corporation in the next ten years and you are making, say, 100 per cent. profit, and then Government brings in a proposal to tax this corporation, you would object to it. One of your arguments would be that during the first 5 years you did not make more

than 10 or 15 per cent. You are by that time a very influential body, you have got a certain amount of influence in the country and in the Assembly. Is it possible for the Government in these circumstances to carry through this legislation? It is no use merely saying you can tax; when it comes to taxing there is this argument and that argument against the proposal. What will the Government then do?

Mr. Peterson.—I think Government should not impose any taxation until an average profit has been earned.

Mr. Mathias.—Would not this system of taxation have a very disturbing effect on the investors?

Mr. Peterson.—That would always happen. What about the excise duty on jute?

Dr. Matthai.—If your proposal were to be carried out, it would be an excise duty on steel and would have the same effect as the cotton excise.

Mr. Peterson.—We would not object provided we earned the profits.

President.—I think the better argument is the one given in the extract from the Report of the Fiscal Commission, namely, that if the profits become excessive then that is the quickest way of reducing the prices, and bringing in more capital, or if there is a rise in the world prices that might do it.

Mr. Peterson.—I agree.

President.—Not that if that happens we should have recourse to special taxation. After all, the way to look at it is this. If you have inadequate protection, the protection has to be continued for, say, 40 years during which period the consumer has to bear the burden. But if it takes this form and profits become high and more capital comes in, more industries will come in at an earlier date and the burden on the consumer terminates much earlier.

Mr. Peterson.—That is the argument.

President.—As regards pig iron, I think the price of pig iron is a little higher on the Continent than in Great Britain to-day.

Mr. Peterson.—There can't be much difference.

President.—So far as pig iron is concerned, how much reduction in your costs would enable you to sell pig iron at a profit in Great Britain?

Mr. Peterson.—We have already been selling to Europe at a small profit. The Indian Iron and Steel Company who export practically at the same price as ourselves, have been landing their pig iron at Glasgow at a profit.

President.—It would not be very much.

Mr. Peterson.—The profit would be very small, one or two rupees.

President.—Take your works costs at Rs. 27.

Mr. Peterson.—All-in cost Rs. 30, including depreciation Rs. 32. The freight would be about 16 shillings. I can give you the exact figures. We have sent pig iron to Italy.

President.—It is just about Rs. 42 and including other charges the total comes to Rs. 45.

Mr. Peterson.—Yes. We reckoned one or two rupees per ton on the sale of pig iron to the Continent.

President.—But in the case of steel you would require a much bigger margin.

Mr. Peterson.—Yes.

President.—You will have to bring down your cost of steel in a much bigger proportion in order to export steel to Europe.

Mr. Peterson.—The kind of product that we would contemplate exporting —if we ever started exporting—would be sheet bar and billets and the costs with the mill running to full capacity would be very low indeed. It has a ready sale anywhere.

President.—It is a sort of semi-finished product.

Mr. Peterson.—Yes, for which there is a market in any part of the world. It is a commodity of very much the same sort as pig iron which can always be sold.

Mr. Mathias.—The works costs you have estimated at Rs. 65.

Mr. Peterson.—Yes. That is for a comparatively small production, the mill is capable of an output of 500,000 tons.

Mr. Mathias.—Which would reduce the costs substantially.

Mr. Peterson.—If we reached the full output, it would bring down the costs very low indeed.

President.—You say: "We think that the protection necessary should be given in the form of additional duties. This was the intention of the original Act." Do you mean the supplementary protection?

Mr. Peterson.—Yes.

Dr. Matthai.—At the beginning of paragraph 27 you make a statement: "It is not possible to devise any sliding scale of protection that could be subject to periodic automatic alteration." Why do you say it is not possible?

Mr. Peterson.—I have tried to do it during the last three years, but I cannot work out a practical scheme.

Dr. Matthai.—Your point is this that if we had a scale of protection which meant a sliding scale, then it would assume that we are making a too precise estimate of prices.

Mr. Peterson.—No.

Dr. Matthai.—Is not that what you mean?

Mr. Peterson.—What I mean is that there are other factors, outside price, entering it.

Dr. Matthai.—It is because you cannot make any precise estimate with regard to the external conditions that a sliding scale would be impossible.

Mr. Peterson.—Yes, in my opinion.

Dr. Matthai.—Supposing we took the problem of exchange out of the question by means of an off-setting duty or anti-dumping duty.

Mr. Peterson.—You will still have the difficulty of prices.

Dr. Matthai.—As far as you are concerned, the main factor has been exchange.

Mr. Peterson.—I wouldn't say that entirely.

Dr. Matthai.—But you said so entirely.

Mr. Peterson.—It has been partly a reduction in costs in England and on the Continent simultaneously with our own reduction of costs. Improvements in processes are going on continuously. Besides exchange there are other factors like the reduction of freight, etc., which have affected the price.

Dr. Matthai.—The rest of the risks are those which you might reasonably be expected to face.

Mr. Peterson.—Your sliding scale would be so extraordinarily complicated that it would not work.

Dr. Matthai.—What is the complication?

Mr. Peterson.—You have so many factors entering into it.

Dr. Matthai.—Assuming for the moment we are not going to take into account freight and so on.

Mr. Peterson.—That is one of the most important variations that occurs.

President.—What about commercial transactions if you have a sliding scale?

Mr. Peterson.—That is why it is very difficult. How are they going to sell?

President.—The man who buys steel wants to know how much it is going to cost him before he buys.

Dr. Matthai.—Supposing the sliding scale took the form of bounties.

Mr. Peterson.—That might be possible.

Dr. Matthai.—That is to say your price level won't be uncertain.

Mr. Peterson.—Later on I have suggested that the bounty should be retained on rails and it should be taken off as protection becomes unnecessary.

President.—As regards the quantum of protection that you deal with on page 21, it is a question of principle. Supposing we find that to-day your cost is Rs. 100 and say in 5 years or 10 years it will come down to Rs. 80, we must take an intermediate figure between the two.

Mr. Peterson.—We must take either a different figure for each year or one figure covering the whole period which would be more satisfactory from a commercial point of view. I thought it was necessary that you should have a definite figure covering the whole period. That means that protection would be slightly lower at the beginning, and slightly higher at the end. In order to meet that point the bounty should be continued on rails and might be reduced if necessary to compensate the excessive protection.

President.—As an inducement to speed up it might be better to have protection a little lower at this end than at the other.

Mr. Peterson.—That is a point too. Quite apart from our own works, I was really considering the possibility of the establishment of the new works. I came to the conclusion that they would very much sooner have a definite rate fixed than a rate that dropped according to our costs. That would seem to them very unfair.

President.—Supposing there is no period fixed, the law simply fixed the rate, that is all, and did not say anything about alteration.

Mr. Peterson.—That would be the best arrangement for all.

President.—Paragraph 30 we have discarded.

Mr. Peterson.—I am not quite clear as to how you have discarded it.

President.—Readjustment is required.

Mr. Peterson.—You treat the profits of pig iron as entirely separate.

President.—Sheets go out.

Mr. Peterson.—You are taking out sheets altogether and readjusting prices on the two principal products. Shall I have these statements corrected?

President.—They must remain as they are. We shall make these adjustments.

Mr. Peterson.—Yes.

President.—Then you ask for a bounty on rails. That is merely, I take it, to make up what you consider to be otherwise a deficit. Is that your idea? It is not because you want to lessen the burden on the consumer or anything of that sort.

Mr. Peterson.—I have said here definitely that we don't want a high price on rail materials. Therefore we suggest a bounty.

Mr. Mathias.—In paragraph 30 you have worked out the amount of profit which would be made on an average selling price of Rs. 155 per ton. The average price is being calculated on the production of 1927-28 which is comparatively a small production. In 1933 the production is pretty nearly double and your profits would be larger in proportion.

Mr. Peterson.—I have that worked out differently.

President.—The price goes down. Rs. 241 lakhs in all is what you are aiming at.

Mr. Peterson.—If you look at paragraph 23, it will be seen that we are reducing the overhead charges with the reduction of costs.

Mr. Mathias.—The average selling price would be Rs. 155 per ton. Would this not mean increased profits for you?

Mr. Peterson.—It would be less at the beginning and more at the end.

Mr. Mathias.—So that this calculation of profits for 1927-28 is your minimum?

Mr. Peterson.—I have taken the average of 5 years from 1927-28. I have given you what the profits would be, *viz.*, Rs. 253 lakhs, assuming an average cost of Rs. 100 and an average selling price of Rs. 155 and a margin of Rs. 55.

President.—That will leave you a margin of Rs. 12 lakhs for contingencies.

Mr. Peterson.—Yes. As a matter of fact we never get the average selling price. We never get the total margin which is estimated. If the margin is estimated at Rs. 55 probably we would not get more than Rs. 50.

Mr. Mathias.—It is a question of adjusting duties.

Mr. Peterson.—That comes to 461,000 tons. The increase in production will be 100,000 tons.

President.—Then paragraph 32 deals with your proposals. Does the present landed price given by you include the duty?

Mr. Peterson.—Yes.

President.—Let us see how it works out. The present duty on rails is Rs. 14. You want Rs. 54.

Mr. Peterson.—Yes.

President.—On heavy structurals you want Rs. 55 instead of Rs. 30. On plates instead of Rs. 30 you want Rs. 55. On bars instead of Rs. 40 you want Rs. 65. On light structurals instead of Rs. 40 you want Rs. 64. On black sheets instead of Rs. 30 you want Rs. 90. On corrugated instead of Rs. 45 you want Rs. 85. Sleepers will be Rs. 54. Light rails will be Rs. 85.

Mr. Peterson.—They are less than those originally proposed by the Tariff Board.

President.—You propose a duty of Rs. 85 on light rails. It comes to nearly 110 per cent.

Mr. Peterson.—There must be some mistake then. I will look into that.

President.—On heavy structurals it comes to 90 per cent. If we are to propose an *ad valorem* duty this is a duty of 90 per cent.

Mr. Peterson.—I have not suggested an *ad valorem* duty. I have suggested a specific duty.

President.—You want a price of Rs. 160 on rails under this proposal of yours.

Mr. Peterson.—Yes. As regards rails that is the rate fixed by the Tariff Board two years ago. If a proposal is made that we should supply the whole of our tonnage to the railways at a definite price, we would agree.

President.—I am putting forward a suggestion. I would like you to consider it. Supposing you expect a return of Rs. 50 or Rs. 55 on all steel and in the case of rails where you get a sort of regular stream of orders, would it not be worth the Company's while to be satisfied with say Rs. 50 or less apart from the scheme of protection?

Mr. Peterson.—Undoubtedly.

President.—So far as rails are concerned, Rs. 5 or so less may not do any harm.

Mr. Peterson.—It would follow that you would have to increase the other.

President.—Not necessarily.

Mr. Peterson.—The point is that under the scheme of protection you must get a certain nett result.

President.—I agree, but—

Mr. Peterson.—If you reduce one, you must increase the other. These are not worked out to give us any more than necessary. With regard to rails, we have already made an offer to the Government of India in the letter of which I said I would give you a copy. We made an offer to the Government of India that we should supply all the Indian Railways at the price at which the English Railways bought rails in England.

President.—Instead of fixing the price by contract, supposing Government say "There shall be levied a duty of Rs. 54 per ton on rails but the price of rails manufactured in India shall be, say, Rs. 140" without there being any contract, would not that meet your case? The duty may be so fixed that it would not pay them to import rails from outside. That gets over the other complications that we were discussing yesterday.

Mr. Peterson.—We would obviously prefer that the Indian Government should make some arrangement with the Indian Railways whereby all our rails are sold at a fixed price to all the Railways in India.

President.—I am trying to get over the difficulty of strikes and various other things you were talking about. Supposing the price is fixed considerably below that at which they could import rails, say, Rs. 130 and we leave it at that.

Mr. Peterson.—You will find some of them still importing.

President.—The duty is assumed to be high enough to keep the foreign rails out. They cannot go on importing foreign rails. Somebody will want to know why it was being done.

Mr. Peterson.—I know that the Government of India have endeavoured to bring strong pressure to bear on them.

President.—Supposing that was done, would not that be an effective way of doing it? You don't want to enter into any definite contracts with them if it is impossible for the Railways to import rails without a loss.

Mr. Peterson.—And simultaneously fix a price for rails.

Mr. Mathias.—Who would fix the price?

President.—It would be said in the Act that so long as the Act continues, the price shall be so much.

Mr. Peterson.—How would that affect the new works?

President.—It would be the same. That is in substance what the United Steel Corporation is doing. The duty at one time was several dollars, but that had no relation whatsoever to the price fixed by the United Steel Corporation.

Mr. Peterson.—I think that it would be satisfactory.

President.—Then we come to your summary. There is nothing new in it except that in clause (4) of that paragraph. You say: "We ask for the continuance of the present bounty of Rs. 20 per ton on rails until such time as the industry can do without this." What is the point of that?

Mr. Peterson.—To give you a make weight by which you can reduce the protection if necessary. If the industry is making too much profits, you take it off altogether. If the industry is making fairly large profits, you take off half of it.

President.—It does not apply only to rails. Supposing the protection became excessive, Government could take off the bounties.

Mr. Peterson.—I propose that on rail because it is the easiest product. Supposing our production is 150,000 tons, it comes to Rs. 30 lakhs. It is a reserve which you could reduce if necessary. It is the same idea as your off setting duties in a different form.

President.—Then as regards clause (6), your contention is that it is no good protecting the main industry unless the subsidiary industries are also protected.

Mr. Peterson.—Quite so. I have not discussed it in detail. I thought it better to leave to them to put forward their own case.

President.—This aspect must be put forward by you. You have not done so.

Mr. Peterson.—In which way?

President.—You manufacture these structural materials which form the raw material of the fabricating industries.

Mr. Peterson.—I was thinking of that.

President.—Supposing no protection was given to the fabricated steel industry, how is your protection likely to be affected?

Mr. Peterson.—I would give you a note on that.

President.—The main steel industry has to find a market for its products.

Mr. Peterson.—Yes.

President.—Part of that market—a substantial market in some cases—is the engineering industry. If no protection is given to the engineering industry, how are your interests likely to be affected?

Mr. Peterson.—What actually happens is that fabricated steel comes in at a lower rate of duty than is levied on raw steel. Therefore the engineering industry does not buy our steel. The simplest thing is to give you one or two specific cases of actual contracts which have been lost. I would get these for you if they have not themselves sent any representations. I suggest that the Sales Manager may be examined on this point.

President.—Supposing you had a sort of contract with an engineering firm that you would supply it 5,000 tons of unfabricated steel if they wanted it. If you could show that at the beginning of the scheme you expected to sell 5,000 tons or whatever the quantity was but as protection was not given, you lost the contract—

Mr. Peterson.—I will give you a note on that.

Dr. Matthai.—Do you mean figures about these contracts to show that these engineering firms have lost them because prices have gone up on account of protection?

Mr. Peterson.—That was what actually happened. We quoted Rs. 140 for the structural material required for a bridge on the South Indian Railway. The engineering firm asked us to reduce the price in order to enable them to quote against British steel. We reduced it to Rs. 130 and they tendered and lost the order.

Dr. Matthai.—Supposing you give us a statement of that kind it would give us information with regard to the extent to which these industries have got to be compensated. We are not merely concerned with off-setting protection but also substantive protection. Can you give us any evidence that if they are not given substantive protection, they will not develop to the same extent?

President.—Take an extreme case which often helps to understand a situation like this. Let us assume that the engineering industries get no protection and therefore they cannot compete. Consequently, they cannot use any of your raw steel. On that basis, can you have some idea of what would happen to your market?

Mr. Peterson.—We can do that.

President.—You can also give us illustrations.

Mr. Peterson.—Yes.

Development Programme.

President. I think that we have been through these items in detail. We shall have to be advised by our expert whether the measures you are taking are adequate, but apart from that I must again repeat what I said before that this period of 7 years is far too long.

Mr. Peterson.—We will do it in less time if it is possible.

President.—I am telling you what is in my mind. I don't think that you should take five years to complete the programme and another two years to get results. You do not realize that you will throw far too much burden on the country that way. You stated that in 5 years' time a newcomer would be able to manufacture steel. I cannot conceive how if that is so you could say that you would take 5 years to carry out these extensions.

Mr. Mathias.—Is it a matter of finance?

Mr. Peterson.—Partly that.

President.—If a new man could get his plant going in 5 years, why should you want 5 years to carry out these extensions?

Mr. Peterson.—I will tell you why, because the man constructing a new plant is constructing that only and doing nothing else. We are continually operating and we have to construct these in the middle of our operations without disturbing them.

President.—I don't believe in this argument that to build a new house would take one year but that to extend it would take 5 years.

Mr. Peterson.—Seeing is believing. I will show you the work that is being done on the soaking pits and you will see what dislocation it causes in the working of the blooming mill. It means large excavations inside the works.

President.—I admit that it is a troublesome business. But you must remember that the country is trying to help the industry and it is entitled to expect the industry to take all the trouble that it possibly can in order to save time. In my opinion if this programme is going to take you 7 years before you get results, the country may have reason to complain.

Mr. Peterson.—Only 5 years.

President.—But you want two more years to get the results.

Mr. Peterson.—It is difficult for me to say. My own feeling is this. I first came into touch with the Steel Company when they were engaged in constructing the Greater Extensions and the result was a complete disorganisation of the works for a period of three or four years. I don't want to see it happen again. A great amount of material which was shipped out to this country lay on the ground without being erected because it was impossible to erect it.

President.—We know the history of the Greater Extensions.

Mr. Peterson.—You did not see it day by day as I saw it.

President.—The point still remains that the whole thing depends on the help that you want the country to give you. If you expect the country to help you, the country in its turn is entitled to see that you are doing your part with all the expedition that is possible.

Mr. Mathias.—I suppose that you could raise capital and carry them out.

President.—If you earn two years' depreciation or 3 years' at the most, this thing can be completed.

Mr. Peterson.—A great balance of the expenditure will be incurred in three years. That is provided.

President.—Another thing is that if a man says that he is going to take 7 years to do a thing, he generally does it in 10 years.

Mr. Peterson.—That has not been my experience. I would prefer to take a long estimate and to do it in a shorter time.

President.—Look at your Greater Extensions.

Mr. Peterson.—That is exactly what I am doing.

President.—You took ten years where you said it would take 5 years.

Mr. Peterson.—That is why we are proceeding on a more rational basis with accurate timing.

President.—I am not saying that you should do it in a day. You have so far not done anything except the preparing of rough estimates.

Mr. Peterson.—We cannot do anything until the Assembly decide on this enquiry. We cannot start from 1927. We have not got the money and would not be justified in spending it until we know the future protection.

President.—Have you prepared your plans and detailed estimates?

Mr. Peterson.—The plans are already there.

President.—This year you will earn your depreciation. Therefore you have got no reason for a year's delay.

Mr. Peterson.—If we know that we are going to have further protection we would start at once.

President.—You say finance for these extensions cannot be raised nor can it be met out of depreciation.

Mr. Peterson.—Yes, unless protection is continued.

President.—The fact that you are getting protection and that an enquiry is taking place, they do not consider as a sufficient assurance?

Mr. Peterson.—That would not induce any capitalist to advance the money required.

Mr. Mathias.—Do you agree that if the capital was obtainable it would be better to charge these extensions to capital account?

Mr. Peterson.—That would depend very much on the capital that was raised and the rate at which the capital could be raised. It will be charged to capital account in any case.

President.—Supposing protection is given, will you be able to raise additional capital or would you still have to depend on the depreciation fund?

Mr. Peterson.—This is a question of finance. Probably if we could obtain the finance earlier it would be better to raise the capital than to depend on the depreciation fund.

Hardware Tools.

President.—Now we come to the question of protection for hardware tools. You have given us some costs but no import prices. It is no good going over this on this basis. What we want are your works costs in the ordinary form.

Mr. Peterson.—I think the works costs are given here.

President.—What you have given are the total works costs. That is not the way to put up your costs before the Board.

Mr. Peterson.—This is the form in which we keep these costs.

President.—You say this is the price of the raw material, this is the cost of labour and other things. How do you maintain your costs?

Mr. Peterson.—We can send you the cost sheets.

President.—They must be tabulated in some form. Take the form for black sheet or any other you like.

Dr. Matthai.—When did you start this work as a part of your concern?

Mr. Peterson.—January 1925.

President.—You have to take it like this. Take Statement No. 48 Sheet Mill; you can do it in that form. Take the weight of any particular type of tool.

Mr. Peterson.—We will give it you for all the types separately.

President.—Then you must give us some idea of the c.i.f. price.

Dr. Matthai.—Is there any one thing that accounts for the bulk of your output? What is the biggest?

Mr. Peterson.—Powrahs and picks. Out of a total of 131·75 tons in March picks would account for 44·75 and powrahs 47·87 tons. You will find a statement giving you tonnages and numbers on page 2 of the note regarding protection for hardware tools, such as picks, powrahs, hoes, etc.

President.—Then as regards your block value, may we take this Rs. 12,24,988 as your actual written down block value now?

Mr. Peterson.—Yes.

President.—Is that the replacement value or second hand value?

Mr. Peterson.—It is based on the valuation made for the Bihar and Orissa Government by an independent expert. It was made for the purpose of a debenture loan.

President.—It is the second-hand value of the plant and not necessarily the replacement value at present-day prices.

Mr. Peterson.—No, it would be lower than the replacement value which would be higher. I have not got the replacement value.

President.—It is like buying anything as a going concern on the return that you may expect from it.

Mr. Peterson.—The replacement value may be taken as two-thirds of the original cost which we can give you if you want.

President.—The best thing for you is to give the original cost and say two-thirds will be the replacement value, if that is your opinion.

Dr. Matthai.—When did the Agricultural Implements Company originally buy this plant?

Mr. Peterson.—In 1920. It was bought by Sir Vithaldas Thackersay in America.

President.—What is the full capacity of this plant?

Mr. Peterson.—We are expecting to get 100,000 tools per month. At present we are working at about 60,000 tools.

President.—When do you expect to get the full output?

Mr. Peterson.—I should say within 12 months.

President.—Then there is no point in taking the overhead charges on the present production basis.

Mr. Peterson.—80,000 tools on the present basis.

President.—It will be better for the Board in that case to take them on 100,000 tools basis.

Mr. Peterson.—I will calculate that on 100,000 tools.

President.—You take it in the ordinary way, *viz.*, depreciation 6¼ per cent. and the interest on working capital the same as before.

Mr. Peterson.—Exactly as in the Steel Company.

President.—I think the overhead charges and head office charges would go into the steel account.

Mr. Peterson.—Yes.

President.—You don't make any allowance for that.

Mr. Peterson.—No.

President.—That will be a small fraction.

Mr. Peterson.—Yes.

President.—Until you give this information I don't think it is worth while proceeding with the examination.

Mr. Peterson.—No.

President.—We can't simply say "give effect to our former recommendations." That is what you are asking for.

Mr. Peterson.—Yes.

President.—We can hardly do that.

Mr. Peterson.—We have shown a little better results than before. There are certain reductions in the overhead charges. That is the only difference. Last time the plant was not working.

Production of Wire rods.

President.—Then as regards the production of wire rods, there is an aspect of the case which is quite apart from the position of the Indian Wire Products Company, Limited. The question is whether wire rod ought to be manufactured in this country or not.

Mr. Peterson.—I think it is essential. I would put it on military grounds.

President.—But I understood you to say that in any case you intended to put up this mill.

Mr. Peterson.—Yes.

President.—I want to know what your view is.

Mr. Peterson.—If the Steel Wire Products, Limited, wish us to put up the mill at once and want us to supply wire rods immediately, we will put it in the forefront of our programme. If they don't, in any case we will put it up. But we will do it a little later.

President.—The point is this. If this industry has got a national aspect, whether the present Indian Steel Wire Products, Limited, want to manufacture wire or not, it doesn't matter, because somebody else has got to do it The question is, what is your proposal as regards that? Do you want to do it or you don't want to do it apart from the question of this particular Company?

Mr. Peterson.—I am talking purely from the point of view of the Steel Company. We are not anxious to roll smaller rods, because they have not got a market. If it is considered necessary from the point of view of national defence, we would put up this new mill and that can roll hoops and strips for which there is a large market and also roll these rods.

President.—You must remember this. After we have reported on this, you must not come up to the Government six months later and say that you wanted to start the manufacture of wire rods.

Mr. Peterson.—We shouldn't do that in any case. I have suggested that protection should be extended to hoops and strips. That is what we really want to make.

President.—But then how can we propose anything until we know what you intend to do.

Mr. Peterson.—We mean to put up this mill. We will put it up probably within 18 to 20 months if they want it urgently. If they don't want it urgently, we will put it up in any case in three or four years.

President.—I am not dealing with that aspect of the case.

Dr. Matthai.—If you put it on the ground of national importance, the manufacture of wire rods in this country would become essential.

Mr. Peterson.—It ought to be.

Dr. Matthai.—It is no use protecting the wire on the ground of national importance if wire rod is not manufactured in this country.

Mr. Peterson.—Rods can certainly be manufactured in this country. We intend to put up this mill. You ask us whether we propose to roll wire rods. The whole point is that these people don't want them.

President.—It comes to this. If they don't want it, they may close down. Supposing that Company closes down, does it mean that wire should not be produced in this country? Is the country to depend on the existence of one particular Company if it is an article of national importance? What are the chances?

Mr. Peterson.—You are looking at it from the point of view of national defence.

President.—Yes.

Mr. Peterson.—If nobody else comes forward, we shall take it up and make the wire ourselves. That is what we would do.

President.—That is to say, the manufacture of wire does not necessarily depend on whether these people propose to go on with the manufacture of wire or not. It is a question apart.

Mr. Peterson.—Yes. If there is nobody else undertaking it, we will do so. I am only here considering the question of urgency.

President.—In that case you may be up against the German combine. If it is a question of national importance, it may not affect it.

Mr. Peterson.—No. The protection would have to be higher to meet that competition.

The Evasion of the Duty on Black Sheets.

President.—You have sent us copies of correspondence that passed between you and the Secretary to the Government of India, Department of Commerce, regarding the duties levied on ordinary black sheets and black sheets which have been cold rolled or polished. Please tell me briefly what all this means.

Mr. Peterson.—The whole point is that we found sheets coming in that were called cold rolled sheets at a lower rate of duty. For some reason the duty was fixed at Rs. 30 a ton on ordinary black sheets and Rs. 20 on cold rolled, pickled or planished sheets when the Tariff Board's first recommendations were adopted. We found that sheets that were being actually rolled or smoothed or sometimes only scoured by sand or rubbed with an oily rag were being brought in and passed by the Customs authorities as cold rolled sheets and thereby escaping Rs. 10 of the duty. To that we object.

President.—What happened then?

Mr. Peterson.—Nothing happened. We suggested that the tariff should be amended and that the duty should be the same for all sheets.

President.—What is the distinction you say?

Mr. Peterson.—The distinction between ordinary black sheets and cold rolled sheets is this. Ordinarily black sheets, whether corrugated or flat, are assessed at Rs. 30 a ton, and 'sheets,' if annealed, which have either been cold rolled or smoothed, including planished, pickled or cleaned by acid or other method or 'process' assessed at 10 per cent. on a tariff valuation of Rs. 200, or in other words, Rs. 20 per ton. Therefore they escape Rs. 10 of the duty.

President.—It is very difficult for the Customs people to distinguish.

Mr. Peterson.—Practically impossible. They have a rough and ready method.

Mr. Mathias.—Do you know the original reason?

Mr. Peterson.—I don't know. The tariff is really unscientific. All sheets that come to India are annealed.

Mr. Mathias.—What is annealing?

Mr. Peterson.—Heating after rolling.

Dr. Matthai.—Do you think that all the extra things could be done within Rs. 10?

Mr. Peterson.—It won't cost more than Rs. 2 a ton. Really the sheets if annealed which have either been cold rolled or smoothed, should have been charged at a higher rate of duty, because they have had an additional process. Instead of that there is a lower rate of duty.

President.—Do you mean that cold rolled sheets can be used for the same purpose as black sheets?

Mr. Peterson.—Yes.

President.—Except that they are cleaner.

Mr. Peterson.—Yes, and perhaps smoother.

Mr. Mathias.—Ought they to have a heavier duty?

Mr. Peterson.—Yes, instead of making any difference I should put the same duty on both.

Dr. Matthai.—Have you actually suffered on this account?

Mr. Peterson.—To a certain extent, but nothing very much.

Tariff Schedule.

President.—Then as regards the tariff schedule, you suggest various alterations in the description.

Mr. Peterson.—Yes, in one or two places.

President.—We will have to wait until Mr. Mather is with us.

Mr. Peterson.—These are really technical points.

President.—Except as regards this particular thing about sheets, you have not had any reason to complain about the schedule.

Mr. Peterson.—One difficulty arose with regard to the sheet bars imported by the Tinplate Company. We contended that this was ordinary sheet bar. It was ruled out of item 151 on the ground that it was not common merchant bar, because no merchants in India stocked it. The expression 'Common merchant and bar and rod' is taken from the former schedule and it has really no meaning.

Dr. Matthai.—Your point refers to quality.

Mr. Peterson.—No. The Central Board of Revenue decided solely on the ground whether merchants stocked it or not.

Dr. Matthai.—But you made a counter-suggestion.

Mr. Peterson.—We omit that description. We describe it as flats, squares, bars, etc., used for all purposes.

Dr. Matthai.—I remember that you took the line 'common merchant' meant marketable quality. The Central Board of Revenue took the line that it is ordinarily disposable in the market.

Mr. Peterson.—Really their decision came to this. If it was stocked by merchants it came under this class. If it was not, it came under a lower duty.

President.—Is that 10 per cent.?

Mr. Peterson.—Yes.

President.—You are including tin bar.

Mr. Peterson.—That was the point on which the question arose. Tin bar was not specifically mentioned by the Tariff Board anywhere. We understood that it came under bar and when the Tinplate Company imported tin bar we raised the objection and we said that the duty was payable on it.

President.—I suppose this was put in before we discussed this question of tin bars.

Mr. Peterson.—There is now no particular point in putting it in. But the expression "Common merchant" is not clear.

President.—Does anybody buy sheet bar in any large quantities? Why do you want protection for all sheet bars that you are making?

Mr. Peterson.—I don't think much sheet bar comes into this country. That was intended to cover the tin bar too.

President.—One is a little bigger than the other.

Mr. Peterson.—That is all.

Evidence of Mr. S. K. SAWDAY and Mr. J. C. K. PETERSON, C.I.E., recorded at Jamshedpur on Monday, the 9th August 1926.

The Market for Sections.

President.—You are the Sales Manager?

Mr. Sawday.—Yes.

President.—How long have you been one?

Mr. Sawday.—From the beginning of 1924.

President.—Before that, you were not connected with the works?

Mr. Sawday.—No.

President.—What I wish to know is whether you had acquired any general knowledge as to the technical aspect of steel manufacture before becoming Sales Manager?

Mr. Sawday.—I dealt with certain works questions before that and acquired the general knowledge.

President.—There is one aspect of the case which we have not examined very much before and which I wish to go into this time and that is this, how far is the sales management in real contact, on the one hand with the market, and on the other hand, with the works and its rolling capacity? It may not be impossible that you may be going in for too many of some sections irrespective of the fact whether you could find a better market for other sections if you could roll them on a larger scale. The question becomes far more important now because looking at the cost we find that so far as bars and structurals are concerned you have to use your old mill and by that the cost is going up. It is a very serious matter and I should like you to consider the question—is it necessary having regard to the conditions of the market to go in for so many sections? Have you got any figures to show in what principal sections you have been dealing for the last 12 months?

Mr. Sawday.—What you wish to say is that we might safely cut our sections down without affecting our total output.

President.—I am not talking of this end just now. I am talking of your end.

Mr. Sawday.—We have to sell big structurals and small structurals—what is demanded by the railways and engineering firms. Every section that we roll is wanted by the railways and engineering firms. Of these, only certain sections are wanted by the bazar and they are very limited in number. To show that we are not rolling too many sections, I have got a list of 50 recent specifications for bridges and various works made out by the railways and there is not amongst that 50 more than one specification which is entirely composed of our sections. The railways want more sections than we can roll.

President.—What I want to know are your sales in the different sections for the last 12 months?

Mr. Sawday.—We don't keep a record of sales section by section.

President.—But that is very important.

Mr. Sawday.—We know the sections that are wanted always or seasonably.

President.—You seem to start at the wrong end.

Mr. Sawday.—We don't roll more sections than we have to roll.

President.—That is not the point. The question is whether you must roll so many sections. You do not know what sort of demand there is in the market and for what sections.

Mr. Sawday.—We are out to supply the engineering firms and we want to give them a fair selection of sections.

President.—To the engineering firms you need not supply all the sections they may want. You may say "These are the sections which pay us to roll and the other sections we won't roll."

Mr. Sawday.—That means that the railways could never order bridges entirely from our sections.

President.—Why should it?

Mr. Sawday.—Because they find it impossible to do so now. If you restrict still further it would be more difficult.

President.—In addition to what you roll there is a market for half a million tons of steel at least. Why should you confine your attention to what the railways and the engineering firms particularly require? Your business is to see what kinds of sections are in demand in the market. It does not matter whether it is the railways or the engineering firms who are the buyers.

Mr. Sawday.—The bazar sections are small and few. There is not much trouble in rolling them. They are very much less than we can roll.

President.—There is somebody who absorbs somewhere about 600,000 tons of rolled sections besides what you roll in this country.

Mr. Sawday.—Besides rails and the sections that we roll?

President.—You don't keep any record of the kind of sections which your sell. It is impossible for you to know whether you are really rolling wrong sections or not.

Mr. Sawday.—We are compelled to roll certain sections. For instance we must roll wagon sections. We set out with the object of supplying wagon materials.

President.—Only as many sections as you can roll economically.

Mr. Sawday.—And the rest?

President.—They will buy from outside.

Mr. Sawday.—That is a policy which would give serious cause for the Railways and Engineering firms to grumble.

President.—I don't think so.

Mr. Sawday.—If they say "we cannot design a bridge from your sections" it would be a strong argument on the other side for importing everything.

Mr. Mather.—The main thing is to sell your steel in the most profitable way. It is a matter of relative indifference whether a particular bridge is built exclusively of your steel or not.

Mr. Sawday.—People naturally like to be able to order materials in the country, and we want to encourage that idea.

President.—It is essential first of all for you to know exactly what sort of market there is in the country. For that purpose you have got to study your market and your sales and keep a record. I think you must study also the import market and see what sections are imported and on what scale.

Mr. Sawday.—These figures are not given anywhere.

President.—You must try and get them.

Mr. Sawday.—There is nobody to give them.

President.—It is no use this company going in for sections which do not pay them when there may be a possible choice. All I say is that there is a big market for bars and things like that to which my criticism applies.

Mr. Peterson.—It does not apply to materials commonly sold in the bazar 90 different sections cover that.

President.—I do not know. You may be able to get the information from Mr. Alexander. But he will be undoubtedly guided by Mr. Sawday's sales.

Mr. Peterson.—By what is demanded. That is the only way of testing it.

President.—What your particular customers demand is not the demand of the country as a whole. There is a distinction between the two.

Mr. Peterson.—There will be a much greater distinction according to the destination for which the materials are required. If it pays us to sell better, let us say, at Delhi than at Madras, we will ignore the demand from Madras.

President.—I am not suggesting that you should not.

Mr. Peterson.—We do that.

President.—What seems to me is that there is not sufficient attention paid as far as I can see to the conditions of the market. You are not sufficiently in touch with the market.

Mr. Peterson.—I think there must be some misunderstanding here. Our method of getting into touch with the market is through our dealers. They are the people who say to us " we have orders for these, can you roll and will you roll them " and we go by their information to us. They are the best people to get into touch with the market.

President.—I want better information. As you have not got the figures I cannot do anything. But I should certainly suggest that you should obtain these figures.

Mr. Mather.—The works should keep accurate records section by section.

Mr. Peterson.—Yes.

Mr. Mather.—That would probably give you some idea.

Mr. Peterson.—That would reflect the demands of the dealers on us.

President.—That does not necessarily establish the other proposition that you do not accept orders which cannot be economical from your point of view.

Mr. Peterson.—I should like to put it this way. It might not be economical from our point of view as compared with the manufacture of other materials. Because if the steel is going to a particular destination, the freight advantage may be so great that it outweighs the other disadvantage.

President.—You have to establish that fact.

Mr. Sawday.—It may be uneconomical from our point of view to roll 20 different sections. But at the same time it must be remembered that you cannot get a man to order wagon loads of those sections only which you can roll economically and to order the rest from others. He wants you to make it as far as you can. If you cannot supply him, somebody will. Therefore you are driven to rolling more sections.

President.—I am not satisfied on that point. It is unnecessary for you to roll all the sections even for wagon builders. It may be convenient to arrange with them that if you cannot roll a section economically, you can get it for them. I don't see that there should be any very great difficulty in your being able to do so. You can do that rather than roll 10 tons of one and 15 tons of another section.

Mr. Peterson.—The point there is that the wagon building industry has applied for protection. One of the grounds on which they base their claim to protection is that they can obtain the materials in the country. It is an essential condition.

President.—Only within reasonable limits.

Mr. Peterson.—If we refuse to roll for them, their position is immediately attacked.

President.—They say that you can supply 80 per cent. of the materials. That is their case.

Mr. Peterson.—Do you think that we could drop to 60 per cent. without affecting their case? Quite candidly it often does not pay the Steel Company to roll for them.

President.—You are increasing the costs both ways. You are increasing the cost of your steel and you are increasing the cost of wagons of those people and I think that it requires very careful consideration to understand whether that is a good thing to do. It is no use trying to sell this 20 per cent. when the costs go up by 30 or 40 per cent. It is not an economical proposition.

Mr. Peterson.—If some percentage is laid down, we can arrange to make to that.

President.—No percentage is necessary. It is laid down that they must use a substantial proportion of Indian material and Indian labour. In this there is a wide latitude given both to the Railway Board and to the wagon builders. But if you say that a section cannot be economically produced I don't think that the Railway Board or the Government would insist upon that section being rolled.

Mr. Sawday.—We have recently cut out some sections.

President.—I really want to know what you have been doing in that direction.

Mr. Sawday.—We have now no section which we don't roll once in two months. If we get a small demand, we roll it and stock the rest.

President.—It is quite a feasible thing for the engineering firms. You roll only, say, six sections, and buy the others and stock them for supply when they want them at more or less the same price as British sections. If you do that I am quite certain your works costs would drop.

Mr. Peterson.—From the works point of view yes.

President.—You say you have got to roll them on the old mills?

Mr. Sawday.—It will be impossible to roll all these structural sections on the new mill. There are certain sections which must be rolled on the old mills.

President.—Then don't roll any on them.

Mr. Peterson.—Then we strike at the root of protection for the subsidiary industries immediately. In the first place we must get a market for our steel in the subsidiary industries.

President.—I do not agree with you there. Your business is to look after yourselves first.

Mr. Sawday.—We cannot do that except by keeping our customers.

President.—These customers can take care of themselves.

Mr. Peterson.—If we shut down the old mill and did not roll any of these sections we have to go out of the structural market completely. I do not think we are rolling any uneconomical sections, but we can not shut the old mill at present because if we do that we shall have to go out of the structural market for two or three years, and I doubt very much whether we can put the steel anywhere else. We could roll it into plates, we could increase the production of the plate mill, but there is no market; nor can we increase the production in the sheet mill, and there is no other product into which we could put it.

President.—Have you taken any steps to ascertain the kind of demand there is in the country for the kind of sections you can roll?

Mr. Sawday.—It is not possible. There are all sorts of reports from dealers what sections are wanted, but the quantities they cannot give. You cannot even get figures of the total quantity of steel used, say, by the Punjab, and I have tried to get them from the Chamber of Commerce, but they do not keep it.

President.—The only thing is to get them from the Customs Department.

Mr. Sawday.—They do not keep any record of the sections wanted. It would be duplicating their work.

Dr. Matthai.—How many people do you deal with in the Calcutta market?

Mr. Sawday.—In the engineering trade about six, in the bazar trade we deal with a great number.

President.—The point is whether there is any market in some direction which you have not tapped.

Mr. Peterson.—I don't think this question applies to any other section; it only applies to those rolled on the old structural mill. The output is 25,000 tons a year and practically the whole of that goes to the engineering firms. It is not a very large quantity of the total production. It is really a question whether we can keep our customers or not by shutting this mill.

President.—That is all the more reason why, if it does not pay them or pay you, to shut it altogether.

Mr. Sawday.—It pays them or they would not buy.

President.—It may pay them but it does not pay you.

Mr. Sawday.—Speaking commercially it is difficult to sever our connection with them. They were our mainstay in our time of need when we started.

Mr. Peterson.—It is exactly true that the question of the new roughing mill for the new rail mill comes in.

President.—You cannot go on expecting the country to give you enough protection to commit, what looks like waste for any indefinite period, that is the point.

Mr. Mather.—Normally almost any works making not more than 30,000 or 40,000 tons of structural sections roll only a limited number of sections and the tendency in that direction is gaining ground rapidly.

Mr. Sawday.—We are in a difficult position. In England, if a man cannot buy in one place, he goes next door, but here we are trying to increase the use of Indian material.

Mr. Mather.—That is to some extent outside the point, since you cannot by any possibility encourage the use of Indian material over and above the ingot production that you can have.

Mr. Peterson.—If our customer comes and says he wants 12 or 13 sections and we say "we will give you four or five" he is much more likely to go to somebody else than say "We want half from you and will buy half elsewhere." He must order in waggon loads.

President.—It is your business. You can say "All right. You want 14 sections; we will supply 4 or 5 of our own manufacture and shall buy the rest for you."

Mr. Sawday.—This can be done. We are contemplating it.

Mr. Mathias.—Can you tell me whether buying a large number of sections would mean any difficulty in your accounts?

Mr. Peterson.—We did, as a matter of fact, experiment in this direction and the objection has been taken that it was *ultra vires* to the objects of the company and that we shall have to alter the articles of association.

President.—That is easy. The whole thing is that it is much better for you to tell these people that you will take their orders and supply as much as you can of your own manufacture and buy the rest for them.

Mr. Peterson.—I may tell you that our sales manager Mr. Sawday has been pressing us to do that for the last 10 or 12 months.

President.—We are doubtful of the advantages. When another steel works starts in India you may be able to arrange things better. In the meanwhile you can roll these sections, which pay you and other sections you can get from abroad. When another steel works is started here you can transfer to it such orders as it can conveniently undertake.

Mr. Peterson.—You mean some sort of arrangement with Home suppliers.

President.—Yes. It is no use your going on with classes of production which are so unremunerative.

Mr. Peterson.—We think there might be considerable prejudice against us if we were to import.

President.—Not if this Board comes to the conclusion that that is the more economical way of marketing your products.

Mr. Peterson.—We are waiting for this report. The Company has no general objection to importing. It is a perfectly sound policy, as far as I can see.

President.—It is merely a matter of business. Why should this country go on manufacturing things at a loss?

Mr. Peterson.—That is a question I would like you to discuss when Mr. Alexander is here. He could tell you how far it affects the works costs.

President.—I selected that old mill as a typical case. I use this argument generally.

Mr. Sawday.—It was only a fortnight ago that we were discussing the alternative of buying and stocking them in Calcutta.

President.—Supposing you have got to use this mill for the time being; then you say to yourselves this is the kind of demand in the market and we shall produce so many thousand tons of such and such sections and stock them. It is no use working one shift and spending money which would suffice to work two shifts.

Mr. Sawday.—We roll as our customers want.

President.—There are certain sections which are usually in demand and at certain times of the year the market runs short of those sections; things like that are sure to happen and I am quite certain that you will be able to manufacture enough for stocks if you keep yourselves well in touch with your market.

Mr. Sawday.—We can sell the whole of the products of the 28 inch mill in about 8 sections; but if we do that it would mean cutting off our market for Messrs. Burns and Jessops, etc.

President.—Let them take care of themselves, and look after your own business first.

Mr. Peterson.—It is our business gradually to build up industries which will buy our products and to keep our market.

President.—If the subsidiary industries have to depend on indigenous steel undoubtedly you must do whatever you can for them but within reasonable limits.

Mr. Peterson.—24,000 tons out of our total production is not very much for the fabricating industry in the country, and if we were to stop manufacturing that the whole case for their protection goes immediately.

President.—You can't have it both ways.

Dr. Matthai.—You can get rid of the whole of your output even without supplying the engineering firms.

Mr. Sawday.—We can sell the whole of the output in 8 sections.

President.—Would you mind giving us some figures which would enable us to see what would happen if this mill was closed down.

Mr. Sawday.—If we close down the mill altogether?

President.—Yes. What we were to know is whether you can use up your ingot output without running this mill.

Mr. Peterson.—What you really want to know is what will be the result if we close the old 28 inch mill altogether.

President.—You should so adjust your output as to get the most economical results.

Mr. Peterson.—That is the point. It is the closing of that mill.

President.—Or any other department that doesn't pay. You will confine yourself to such production from your point of view as may be produced most economically.

Mr. Peterson.—The most economical thing is to roll nothing but rails. Do you want us to go as far as that? For instance, next year there will probably be a demand for 200,000 tons of rails and we are only capable of rolling that.

Mr. Sawday.—The closing of the 28 inch mill would so disgust the engineering firms that they would not place orders with us.

Mr. Peterson.—I think we should retail the whole movement towards stopping imports into our most profitable market.

Dr. Matthai.—How much roughly could you reduce their present production without severing your connection with your customers?

Mr. Peterson.—We have reduced a few sections a fortnight ago. We told them that we could not roll them any more.

Dr. Matthai.—You cannot go any further.

Mr. Sawday.—No.

Mr. Peterson.—We don't think we should get orders for more than 200,000 tons of rails. We should be pleased to roll 200,000 tons of rails next year.

President.—That is about the estimate that has been given to us.

Mr. Peterson.—The estimate was given as 194,000 tons for next year.

President.—We shall deal with it when we examine you on that point.

Mr. Peterson.—We would be very pleased to work up to 200,000 tons by cutting anything.

President.—Is your sales organisation, Mr. Sawday interested in rails?

Mr. Sawday.—Yes.

President.—Do the contracts go through your hands?

Mr. Sawday.—The ordinary routine work goes through me.

President.—Who tenders for the rails?

Mr. Peterson.—There has never been a tender.

Mr. Sawday.—Any ordinary order is dealt with here, generally we tender here.

Mr. Peterson.—For the Burmah Railways and the South Indian Railway, tenders were made by the London Office under orders from Bombay after consulting with the Sales Department.

President.—I take it you are largely concerned with miscellaneous production such as structurals, bars and things like that.

Mr. Sawday.—Yes.

President.—Again, take the case of sheets. Have you studied the figures to ascertain what sort of sheets come into the country for which there is a big demand?

Mr. Peterson.—Do you mean by sizes?

President.—Yes.

Mr. Sawday.—I have got all the standard sizes. Except the Railways and engineering firms, I don't think anybody uses our sizes.

Dr. Matthai.—How many different sizes will that mean?

Mr. Sawday.—In galvanised sheets there are five sizes and two gauges, 24 gauge almost entirely and 22 gauge. In black sheets there are 4 different sizes, 14 to 20 gauges.

Mr. Peterson.—Bombay takes a different width of sheet to Calcutta. Rangoon takes a different gauge.

Dr. Matthai.—In galvanised sheets.

Mr. Peterson.—Yes. We have information on all those points.

President.—Your point in statement No. 37 is that the railways deliberately go in for sections which they know cannot be manufactured in this country.

Mr. Peterson.—I think that is a fair statement. I would not say 'deliberately.' Now that they have an opportunity of getting Indian materials, they might have so designed as to take Indian sections. They won't make a change.

Mr. Mather.—You say: "Whoever designed the Jhelum bridge must have been determined to give Indian steel no chance." That is very strong. It requires a lot of evidence to prove it. You have given us no evidence.

Mr. Peterson.—We have given you the actual sections used in the specifications.

Mr. Mather.—The mere fact that it contains 7 or 8 sections which you don't roll is no evidence that they designed to exclude Indian steel.

Mr. Sawday.—We have particularly written to North-Western Railway about this subject in general.

Mr. Mather.—It doesn't prove that what you say is correct.

Mr. Sawday.—It shows that they had the sections which we roll before them. $12 \times 3\frac{1}{2}$ channel must obviously form the bulk of order.

Mr. Mather.—That would depend on the type of bridge.

Dr. Matthai.—The main point is when they drew up their specifications they didn't take sufficient account of the condition of the business in India. That is what it comes to.

Mr. Peterson.—They didn't take into account the possibility of using Indian steel. The engineering firms told us that. I don't know whether the engineering firms are correct or not.

President.—First of all it must be established that alterations of sections would not interfere with the strength or the design of the bridge.

Mr. Peterson.—If the engineering firms were asked, they would be able to design a suitable bridge with our sections.

Mr. Mather.—There is no question that would be possible to design a bridge, but after all the railway engineer who designs the bridge must design the most economical bridge.

Mr. Sawday.—That is an indication that we are not rolling a big enough number of sections.

Mr. Mather.—It doesn't follow from that. It may be that you ought to change your sections. It doesn't necessarily establish that you are rolling a bigger number there is necessary.

Mr. Sawday.—Some of these specifications are actually for small foot bridges. They could be designed of almost any sections.

Mr. Mather.—Not, if economy is to be observed.

President.—You say: "Various standard designs from the North Western Railway show the same desire. Some of the sections asked for are so unusual that they could not be supplied by anyone anywhere without considerable extra cost." In this order have you got any sections like that?

Mr. Sawday.—$11 \times 3\frac{1}{2}$ channels, $7 \times 3\frac{1}{2}$ angles—they are all British standard sections, but they are all unusual.

Mr. Mather.—The mere statement that it is unusual doesn't carry one very much further so long as they are using British standard sections. They were revised a comparatively short time ago for very good reasons. For certain sections they might have adequate justification from the point of view of the design.

President.—After all it is quite possible that the railways take extraordinary care. In some cases they may be able to use more Indian steel than they do, but at the same time unless steel on a very much larger scale is manufactured in this country. . . . . .

Mr. Peterson.—We don't get anything like the proportion that we ought to get. That is to say there does appear to be a tendency to put down in their specifications sections which are not rolled in India. What that tendency is due to I cannot say. It may be due to economy in design. The engineering firms tell us that they could just as easily alter their designs so as to take Indian steel. It is a charge made against all purchasing departments that their tendency is to favour the importers as against the local manufacturer. The Government of India have issued circular after circular on the subject. Whether there is any justification for this charge or not, probably the engineering firms can tell you. They are really the people who deal with the railways, meet the designers and try to get them to alter so as to use Indian steel. It is a complaint made to us by the big engineering firms. We only report it.

Dr. Matthai.—It might be simply inertia on their part.

Mr. Peterson.—It might be. The fabricated steel makers say that this is the case.

President.—Supposing sections which you can roll were adopted, it is very doubtful whether it would pay you to roll them.

Mr. Peterson.—It would not pay. According to the engineering firms the tendency is to include the English and not the Indian sections so that we get no sections.

Mr. Mather.—This doesn't help us in any way at all. If you had given us the total amount of steel required and the total tonnage which could be produced in India and the total tonnage which could not be produced in India, we might have had some idea. As it is, this statement does not prove anything whatever. It merely gives a list of the British standard sections which you cannot roll. It does not give any relative idea.

Mr. Peterson.—We could give you that information from the firm which gave us this list.

President.—Then you must say what sections you can economically roll. That is a far more important point.

Mr. Peterson.—It is not a case of an order. It is only a case of a tender.

President.—Supposing it could be shown that you could roll these sections, but if at the same time you didn't show that it would pay you to roll them, your complaint would not carry you any further.

Mr. Peterson.—If there is a section which is manufactured both in England and in India which can be used equally well with one not made in India, the section which is rolled in India should be preferred. That is the whole point of the argument.

Mr. Mather.—If it doesn't affect the economy in design.

Mr. Peterson.—Certainly. If the Government of India will issue express orders to that effect then we have no further complaint.

President.—What about the economy of production in this country?

Mr. Peterson.—If it doesn't pay us, we won't tender. What we complain of is the specification of material which cannot be made in India.

Dr. Matthai.—In this case, would it not be more expensive to consumers?

Mr. Peterson.—I could not say. That would depend on the design. The engineering firms say that it would not be.

President.—This is not a complete list of sections.

Mr. Sawday.—It is a complete list of the sections that we don't roll.

Mr. Mather.—This is not a complete list of the sections which are included in the design.

Mr. Sawday.—No.

President.—How many sections are there here which you have not rolled and which you can roll?

Mr. Sawday.—Many.

President.—Have they taken any sections which you at present roll?

Mr. Sawday.—In all these specifications there are some sections which we can't roll. It is practically impossible to design anything which would exclude entirely our sections.

President.—The point is how many tons did you lose by that?

Mr. Sawday.—I shall have to work it out for you. A footbridge requires no particular design.

Mr. Mather.—That is not correct. It has got to carry its own weight plus the traffic load and other stresses. And there is always the question of cost. We have taken evidence from two structural engineering firms and I don't know that either of them raised this particular point.

Mr. Peterson.—They have complained to us.

President.—So far as the North Western Railway, the Madras and Southern Mahratta Railway and the Burmah Railways are concerned, they are guided by different considerations altogether. Their contention naturally is obviously that they are not the proper market for Indian steel either fabricated or unfabricated and therefore there is not the same reason for them to use Indian steel as there may be for other railway companies who are nearer you.

Mr. Sawday.—Not the North Western Railway.

President.—That is nearer Karachi than Tatanagar.

Mr. Sawday.—The North Western Railway are our best market.

Dr. Matthai.—You don't make that complaint against the Indian Stores Department.

Mr. Peterson.—We have not heard any complaint from the Engineering firms against the Stores Department. What I want to point out at this juncture is that this complaint is more or less the same thing as the demand that there should be simultaneous tenders in rupees and in sterling. It is always a complaint against the Stores Department and the other purchasing departments. It is on the same ground as the demand that there should be simultaneous tenders in this country.

Dr. Matthai.—I was asking you that because there was some question about the legislative buildings in Delhi as to whether the specification was drawn up in accordance with Indian manufacturing conditions.

President.—I must put it to you this way. So far as these railways are concerned anyhow some of them do believe that it is cheaper for them not to use Indian steel. If you allow that argument it necessarily follows that when they make up their designs and specifications they would direct their attention to British sections and then they must select those sections which pay them less.

Mr. Peterson.—That goes to the root of the case. We say that they ought not to look at it that way.

President.—That is another point.

Mr. Peterson.—That is our point. Every railway will tell you that British steel is superior and therefore it is cheaper to them. You can almost ask any railway you like. But we don't admit that and we say this tendency on the part of the Railways should be checked.

President.—I am going by the geographical position of the railways. If they have got to buy your material it is more expensive for them, they think.

Mr. Peterson.—There is one point that arises in this case. What they do is to draw up a specification and call for tenders. Tenders may come from anywhere but the delivery is at site.

Mr. Sawday.—It may be cheaper at the moment to buy fabricated material from England than only out here.

President.—The first thing that the Steel Industry has got to do is to capture the market which is within its easy reach.

Mr. Peterson.—This fabricated material for the railways is one of the markets undoubtedly.

President.—Is it a good market for this part of India?

Mr. Sawday.—It is one of our best markets certainly on this side of India and in the north.

President.—When I examined you, Mr. Peterson, in Shillong, I wanted to go into the question of freight. You suggested that I should ask Mr. Sawday what I wanted. I should like to know what would be the freight to the North Western Railway if it imported its materials and if it purchased them here. Take the case of fabricated steel.

Mr. Sawday.—If the North Western Railway imported steel at Karachi, it would rail it on its own line to Lahore.

President.—What would be the freight according to the railway material rate?

Mr. Sawday.—It would be less than the railway material freight from Calcutta to Lahore. But the freight from Calcutta to Delhi would be less than the freight from Karachi to Delhi.

President.—Why should we take Delhi?

Mr. Mather.—Take Lahore which is more representative. Delhi is at the extreme eastern end of the line.

President.—You get I think special rates.

Mr. Peterson.—We would not sell this material. It is the fabricating firms that would sell.

President.—The engineering firms would have to take into account the question of freight.

Mr. Peterson.—Suppose we supply to Kumardhubi Engineering Works. The North Western Railway would allow on the material railway material freight to the site. Kumardhubi can compete at any place which is at equal distance from Karachi and their works.

President.—We want to know that.

Mr. Peterson.—They can do so provided they can obtain the material from us at a suitable price.

Mr. Mathias.—In the case of Calcutta firms?

Mr. Peterson.—It is the same.

Mr. Mathias.—You have got to send your stuff to Calcutta.

Mr. Peterson.—There is the freight.

Mr. Mathias.—That would not be railway material freight.

Mr. Peterson.—Not from Jamshedpur to Calcutta. We have a special concession rate from Jamshedpur to Calcutta.

Mr. Mathias.—That would slightly affect the question.

Mr. Peterson.—It would mean that they could compete at a place which is slightly less distant.

President.—We want figures on that point.

Mr. Peterson.—It is a matter of mileage, that is all.

Mr. Mather.—Give us, for example, actual railway material freights from Karachi to the Jhelum bridge and from Calcutta.

Mr. Sawday.—It would be nearer to Karachi.

President.—We hear of this complaint constantly. When we enquire into it we find that these complaints are confined to markets which are not within an economic radius. Take for instance Karachi. We were referring to the question of fabricated steel. The engineering firms want to compete in Karachi.

Mr. Peterson.—They never can.

President.—We don't want the same thing as regards this.

Mr. Peterson.—What I suggest is that where it is possible to use the section which is manufactured in the country they should attempt to use it. They should at any rate give it a chance, not rule it out by their specifications and designs.

President.—If the Indian manufacturer is unable to tender owing to freight, why should an engineer not buy British sections which he may get cheaply.

Mr. Peterson.—There is no reason. All that I say is that the engineer should use a section which is manufactured in the country if he can economically do so. I don't put it higher than that.

Mr. Mather.—The previous tenders may show that he does not get the material.

Mr. Sawday.—They buy lots of fabricated material from Calcutta.

Mr. Mather.—I know that you got large orders in 1924, when I was inspecting, for the Jhelum bridge. That is one reason why I think you are not justified in making these assertions. They took a lot of steel from you, and when I consulted them about certain points arising in inspection on which it was possible to hold two opinions, they decided ultimately in favour of your Company. The suggestion here that there was some deliberate prejudice is certainly not borne out by my own experience—rather the contrary.

Mr. Sawday.—The Calcutta firms tell me that it is an exceedingly costly bridge.

Mr. Mather.—That may very well be. My own experience indicates that there is no sound reason for this statement.

Mr. Mathias.—I understand that you are not bringing any charge against certain administrations. It is only against this particular case.

Mr. Sawday.—It is all left to the railway bridge designer.

Mr. Peterson.—We ourselves do not come in direct contact with them.

Mr. Mathias.—We don't bring this charge, even against the designer of the bridge, of a deliberate attempt to restrict the use of Indian steel.

Mr. Peterson.—I think that there is a tendency in that direction.

Mr. Mathias.—You would not say "deliberate attempt."

Mr. Peterson.—It may be deliberate or just inertia to alter what has been going on.

Mr. Mathias.—You would not press the charge of deliberation.

Mr. Peterson.—We cannot prove it.

Mr. Mathias.—If you can't prove it, is it any use pressing it?

Realized prices.

President.—We will now go into the question of prices. I take it that these realised prices—Table No. 85—do not include the bounties.

Mr. Peterson.—Excluding bounties.

President.—Comparing the prices that we get from various importers your prices seem to be higher than theirs.

Mr. Sawday.—The prices that we give for beams are taken from the actual invoices received from England by the engineering firms in Calcutta.

Dr. Matthai.—When you find different invoice prices in the same month, do you give the highest figure?

Mr. Sawday.—We give the average.

President.—As regards these Continental beams, for instance, we find Burn's giving £6-5-0 against your £6-9-0.

Mr. Peterson.—There are always variations.

Mr. Sawday.—They have perhaps given their lowest quotation.

President.—I just wanted to know what the difference was due to It is very difficult for us to know what price to adopt.

Mr. Sawday.—The difference might well be about 5 shillings.

President.—Do you think that it is worth while taking an average of all these quotations?

Mr. Peterson.—I suggest that you should take the lowest. Obviously what you have to protect us against is the lowest price.

President.—I think you will agree that the best thing is to take the average of 4 or 5 important things.

Mr. Peterson.—I would seriously suggest that you should not take the average. As soon as protection comes in, all prices fall to meet it. It is a question of the margin of safety, I would take the lowest deliberately.

President.—The one thing that I have been trying to get is really to find out the difference between the average price realised by you and the average c.i.f. price for the period.

Mr. Peterson.—I think we are mixing up British and Continental prices. If you put the two together it would not be satisfactory.

President.—In the next report if we make any recommendations at all prices must have reference to the industry as a whole. Ordinarily your realised price would represent the price of foreign steel. It may be within a rupee or two, is it not so?

Mr. Peterson.—Our Calcutta price would represent the price of imported steel. Probably it would be a little under.

President.—What I want to know are your prices of steel f.o.r. Tatanagar and f.o.r. destination. I take it that for the railways and engineering firms you quote f.o.r. Tatanagar.

Mr. Sawday.—For the railways we quote f.o.r. Tatanagar and for the engineering firms we quote Calcutta prices.

President.—We want to know the percentage of supplies to the Calcutta local market and the up-country market.

Mr. Sawday.—Here is a statement of one year's supplies (handed in).

President.—We want to reconsider that point. In making our calculations we did two things. First of all we took a sort of weighted average of British and Continental prices. The next thing we did was that we made certain additions to the c.i.f. price to determine what your average price was because you have had an advantage in freight. We really want to see whether it is necessary to do that any more having regard to the fact that a new steel works may come in. We want to get some idea.

Mr. Sawday.—Our production goes up-country and also to Calcutta. I can give you that.

President.—I take it that if you take the average distance of 1,000 miles from Calcutta.

Mr. Sawday.—You had better take the difference in money.

President.—Will you be able to give the prices?

Mr. Sawday.—I can give you our average prices for both Calcutta and up-country and also the quantities sold.

Dr. Matthai.—We want that in three groups.

Mr. Sawday.—You want British Standard material f.o.r. Tatanagar, bazar material f.o.r. Tatanagar and up-country material f.o.r. Tatanagar?

Dr. Matthai.—Yes.

President.—Do you allow any discounts now?

Mr. Sawday.—The statements show actual realisations.

President.—Then you more or less sell British Standard material at the British price *plus* the duty *plus* landing charges?

Mr. Sawday.—Yes.

Heavy Structurals.

President.—In these heavy structurals what do you include? (Table 85.)

Mr. Sawday.—28" mill—channels, angles, beams, whatever is rolled in the old mill.

President.—There the average prices have been behaving in a rather curious way. In June 1925 the average was Rs. 148·18 and by March 1926 it dropped to Rs. 134·54 and then went up in May to Rs. 140·68. What is this rise due to?

Mr. Sawday.—In April we cut off the rebate of Rs. 5. Then, of course, the engineering firms who take the bulk of the structurals are sometimes allowed a special price to meet the imported fabricated competition.

President.—In the case of engineering firms the average has dropped. In March it came to Rs. 133·8, in April Rs. 129·3 and in May Rs. 128·4, whereas your average price has gone up. The drop was from Rs. 148 to Rs. 134 between June 1925 and June 1926. There were variations, but the general average has risen though the engineering average has dropped.

Mr. Sawday.—Engineering firms April first class material Rs. 129·3.

Dr. Matthai.—This difference in the price that you quote to the engineering firms must depend partly upon the quantity sold and partly on continental competition?

Mr. Sawday.—It is based on the cost of the imported British material. The dealers price is based f.o.r. Tatanagar at something comparable with the Continental rate, about Rs. 10 extra, and then to that is added freight advantage to various stations. For British Standard f.o.r. Tatanagar we get from engineering firms Rs. 134, from bazar Rs. 135 to Rs. 145 at the present moment.

President.—The point is this. The drop in the general average is Rs. 8 and in the case of engineering firms it is about Rs. 12 or Rs. 13 during this period of one year, June 1925 to May 1926.

Mr. Sawday.—There in one month we sold to dealers at Rs. 151. At that time our base price was Rs. 130.

President.—The dealers do pay a higher price. Is this for British specification steel?

Mr. Sawday.—No. These are all untested materials. We now get Rs. 135 to Rs. 145 f.o.r. Tatanagar.

Mr. Mather.—Even apart from the freight advantage or disadvantage in some places, am I to take it that you get a little better price from the dealers than they would pay for Continental, quite independent of the freight?

Mr. Sawday.—They give us about Rs. 10 more. Continental joists are sold by foot run. All dealers buy per foot run and sell it by actual weight. Sectional weight is about 10 per cent. above the actual weight so when the dealer is quoting for Continental material he is getting 10 per cent. more for it, then he quotes.

President.—We expected you to realize a price of Rs. 145, and you have gone up to Rs. 140. In this section I take it that the Continental material does not come into any very severe competition with you?

Mr. Sawday.—What we sell to the dealers is affected by the price of continental material because the dealers price is based on the Continental price, only that we get Rs. 10 more.

President.—It affects you favourably.

Mr. Sawday.—Our base price at Tatanagar at present for beams is Rs. 115. For the engineering firms we sell f.o.r. Calcutta at imported landed price of the British material; for the dealers we sell at a price Tatanagar based on the continental *plus* Rs. 10 and on top of that we have the freight advantage to destination.

Dr. Matthai.—For heavy structural in 1925-26 you got Rs. 143 from your dealers and Rs. 138 from the engineering firms.

Mr. Sawday.—At the present moment dealers prices will have to come down. They are too high to sell but we haven't got much to sell to the bazar.

President.—You have given the average for the whole financial year as Rs. 139·53.

Light Structurals.

Dr. Matthai.—In light structurals it is the other way about, is it not? You got from dealers Rs. 126 and from engineering firms Rs. 141.

Mr. Sawday.—For our untested light structural and angles and bars we cannot have anything more than the Continental price as the basis.

President.—Have you any recent information as to the British prices of steel?

Mr. Sawday.—Prices have gone up by about 5 shillings for delivery within a certain period after the end of the strike.

President.—In light structurals (Statement 86) I do not see so many fluctuations. In June 1925 it was Rs. 136·26 and in March 1926 you got Rs. 140·27 and in May Rs. 134·39, but there was an occasional rise. For instance, in December you got up to Rs. 146. Was there any special reason?

Mr. Sawday.—In that month engineering firms paid for 1,662 tons at Rs. 148·29.

President.—It may be that some more expensive sections were taken by them. What was the average for light structurals?

Mr. Sawday.—Rs. 133·76 was the average and the estimate was Rs. 141.

President.—Is much Continental steel in competition here?

Mr. Sawday.—Entirely in the bazar.

President.—That would be in Calcutta?

Mr. Sawday.—Calcutta and up-country.

President.—But inspite of your advantage in both directions you have not been able to get more than Rs. 133?

Mr. Sawday.—We have been selling in Calcutta as low as Rs. 117 f.o.r. Tatanagar.

President.—Mr. Anandji Haridas, in course of his evidence, told us that the Tata Iron and Steel Company reduced their prices all of a sudden.

Mr. Sawday.—What we cannot sell up-country we are selling in Calcutta. If pressed temporarily to sell in Calcutta we sell and leave the up-country price alone.

President.—In Calcutta therefore you have got to sell below Continental prices?

Mr. Sawday.—We are getting Rs. 4 or Rs. 5 more generally.

President.—How do you get more?

Mr. Sawday.—Because of quicker delivery and attention to complaints.

President.—What mills are these light structurals made on?

Mr. Sawday.—Merchant mill and old bar mill.

President.—I think, Mr. Peterson, you had promised me a table showing the variations in the exchange.

Mr. Peterson.—Month by month, we can work it out for you. Do you want it for 5 years?

President.—I think it would be useful.

Mr. Peterson.—Yes. You don't want the Belgian or French exchange.

President.—The fluctuations in the Continental exchange have not been reflected to the same extent in the price.

Mr. Peterson.—No.

Dr. Matthai.—How do you account for that?

Mr. Peterson.—Partly due to the difficulty of getting the material and partly to the difficulty of getting credit.

Dr. Matthai.—Would it be safe to assume that any further depreciation of the franc is not likely to make itself felt in prices?

Mr. Peterson.—I don't think it is ever safe to say anything about it. We have been watching the effect of the depreciation of the franc during the last six months. We don't as yet find any great difference in prices according to the rise or fall in the franc.

Mr. Sawday.—They quote in sterling only.

Mr. Mathias.—In that case will not the effect be to stabilise the prices—the tendency will be for prices not to fluctuate very much though the exchange varies. My point is that for the purpose of steel selling and buying the foreign exchange disappears.

Mr. Peterson.—I am not sure about that. It may be very largely affected by the strike in England. As England is not producing, the Continental manufacturers may be keeping the prices up as far as they can.

Mr. Mathias.—My point is whether their prices will fall if they quote in sterling and not in francs.

Mr. Peterson.—The quotations are always in sterling. Whether the sterling prices fall with the fall in the Continental exchange, it is very difficult to say.

President.—At present I was looking at the May figures.

Mr. Peterson.—We don't see any reflection there.

President.—So far as Great Britain is concerned, the demand for steel has fallen, because they cannot re-roll steel and therefore it is not a complete explanation.

Mr. Peterson.—I fancy they are buying.

President.—They may buy finished steel. They are buying less and less semi-finished products.

Mr. Peterson.—Sterling quotations might fall with the fall in the franc.

Mr. Mather.—I quite agree with you.

Mr. Peterson.—I have here a report from Berlin showing how the sterling prices fall with the deep in exchange. (Read.)

President.—It may be that the Belgian and French exchanges are reacting on Germany and Great Britain.

Mr. Peterson.—Possibly. All we can say is that we watch the fluctuations in the French exchange and we have not seen any corresponding fluctuations in the prices.

President.—But in trying to make any future estimates what do you suggest that we should do as regards the exchange position so far as prices are concerned?

Mr. Peterson.—You remember you made the suggestion of an off-setting duty which should come into operation more or less automatically.

President.—We have to get the basis first of all.

Mr. Peterson.—I think the only basis you can take is a stabilised currency based on gold and take the depreciation against that. Take the rate of exchange prevailing on the 1st of April.

President.—When the exchange is not reflected in prices that scheme might fail. Just now we have been discussing that.

Mr. Peterson.—The scheme might give us too high a price?

President.—The scheme may not work at all. If the exchange is not reflected in prices, how can you apply off-setting duties?

Mr. Peterson.—You could apply the off-setting duty, but the duty would have to be higher.

President.—No. There may not be any occasion for changing it. Suppose the franc drops by 100 francs, but the price drops by 5 francs only.

Mr. Peterson.—I would put on a duty.

President.—If the sterling rises to 268 francs and if you are to put on an off-setting duty merely on the ground of exchange alone, you will have to

raise it by the difference whereas, as a matter of fact, the prices may have only dropped by 5 francs.

Mr. Peterson.—I would deliberately put on a higher duty. My point of view right throughout has been that if you make a mistake in that direction it can be corrected subsequently, but if you make a mistake in the other direction, it becomes extraordinarily difficult to correct it.

Dr. Matthai.—It all comes back to the margin of safety theory.

Mr. Peterson.—Practically.

Bars.

President.—As regards bars your average price was Rs. 137·82 for the year, but curiously enough in June 1925 it was Rs. 141·40 and at the end of May 1926 it was Rs. 141·96—almost exactly the same.

Mr. Sawday.—Yes.

Dr. Matthai.—In both cases in bars the Continental price would be the basis.

Mr. Sawday.—Continental prices are the basis.

President.—There is not the same difference, I take it, between the British prices and the Continental prices as there was before.

Mr. Sawday.—There is a difference of nearly £3 at the present moment. We have kept the prices up by developing the country's demand selling in better areas and so on.

President.—What I wanted to know was how much of this stuff apart from the gap in prices would you sell in competition against the Continent?

Mr. Sawday.—More than ¾ths.

Dr. Matthai.—Your average is much nearer the dealers' price.

Mr. Sawday.—Yes.

President.—The trouble is that so far as bars are concerned, the total imports, say, in 1925-26 were 125,764 tons. Your total sales were 62,000. That is to say, you produced about half the quantity.

Mr. Sawday.—Yes.

President.—It really comes to one-third of the total demand.

Mr. Sawday.—Yes.

President.—The question that arises as regards these bars, it is that for certain quantities you would always sell your British standard specifications, for which you would get British prices.

Mr. Sawday.—Yes.

President.—That is about ⅓rd of your total sales, is it not?

Mr. Sawday.—We sold 12,000 tons to the engineering firms and of that 9,000 to 10,000 tons would be British standard specifications.

President.—And the rest is Continental?

Mr. Sawday.—Yes.

President.—What I wish to know is this. Supposing there was this off-setting duty or differential duty on British and Continental steel, then in that case what would be the normal difference between the two prices which would enable you to sell your steel in competition against the Continent? Before, you got about Rs. 10 more in competition against the Continent as regards bars. Assuming that the gap is not so big, it would be an inducement for the people to use more British steel.

Mr. Sawday.—It is only the engineering firms who use British. The bazaar will not use British if the Continental bar is a shilling cheaper.

Mr. Mather.—It won't pay anything extra for yours?

Mr. Sawday.—We are getting a little extra. But for quality—no.

President.—If he had any choice between your steel and Continental steel he would not buy your steel and pay a couple of rupees more?

Mr. Sawday.—No. He will buy as cheap as he can get.

President.—What I want to know is whether so far as your bazaar quality is concerned, you can afford to sell it below the Continental prices.

Mr. Sawday.—The works aims at British standard. What fails to reach that standard is sold in competition against the Continental stuff.

President.—What difference does it make to the works?

Mr. Sawday.—You can ask Mr. Alexander about this. My impression is that it will be about Rs. 5 if we made all Continental.

Mr. Peterson.—The difference is this. If we don't sell it as Continental material, we will have to put it back into the furnace. From that point of view it is a matter of great difference to the works cost. It gives us an outlet for steel which doesn't come up to the British standard specification.

Mr. Mathias.—You also sell bars which don't come up to the British standard, in competition against Continental, don't you?

Mr. Sawday.—We have two qualities, British quality and untested.

Mr. Mathias.—Untested consists partly of defectives.

Mr. Sawday.—No. Untested means perfect. There are defects in British standard and in untested quality.

President.—You don't specially roll untested material.

Mr. Peterson.—We roll it, but normally we don't specially produce this kind of steel.

President.—How much less would it cost you to turn out untested material?

Mr. Sawday.—If we made all untested.

President.—Yes.

Mr. Peterson.—Mr. Alexander could probably give you exact figures.

Dr. Matthai.—Supposing we arrange the duty in such a way that the landed prices of bars both British and Continental are the same, then I think in the Indian bazaar you would be selling your steel slightly cheaper.

Mr. Sawday.—We would be.

President.—Whether you have an anti-dumping duty or whether you have the same duties, you start with the same price.

Mr. Sawday.—I think the untested material would be sold for a little less.

President.—My point is this. Would the Continental material still sell cheaper than your untested material?

Mr. Sawday.—If the cost of importing were the same, would people pay a little more and take the British standard?

President.—Supposing we put Rs. 40 duty, for the sake of argument, both on British and Continental steel and brought the theoretical c.i.f. price to the same figure, would that theoretical price be maintained or would the Continental steel still come in, say, Rs. 5 cheaper?

Mr. Peterson.—It is probable that they would be prepared to drop their price more than the British manufacturer.

Mr. Sawday.—If for one reason or another the landed price is the same for both, we should sell at the same rate the untested material. The bazaar would still continue to take it. They don't want the British standard material. They want soft material.

President.—But then what it comes to is this that assuming the untested material is cheaper, you would be still getting a higher price for it if the Continental price were the same as the British price.

Mr. Sawday.—We would, because we have the freight advantage.

Mr. Mather.—You would make a large profit out of your untested material —partly out of untested and partly out of defective materials.

Mr. Sawday.—We should make a better profit out of defectives. If you made the prices higher, it would certainly be an inducement. Even as it is,

we have every inducement—to sell to the bazar rather than to the engineering firms. We sell to the engineering firms because they have to be kept going. There has been no monetary advantage during most of the year.

Dr. Matthai.—It comes to this that on the whole there is no question of substitution of British bars by the Continental bars.

Mr. Sawday.—No, they are two different classes.

Mr. Peterson.—If British soft material comes in, it will compete with the continental material.

President.—In the July 1925 enquiry one of your complaints was that Continental steel was being used on a larger scale than before. Is that so now?

Mr. Sawday.—What we said then still holds good. Some of the railways use Continental material. The Bombay, Baroda and Central India Railway and the Bengal Nagpur Railway only take the British standard material. The other railways don't.

President.—Is it because of the gap in prices?

Mr. Sawday:—Yes.

President.—I think that in the earlier enquiry you gave instances in which the railways had purchased the Continental steel. Could you give us any instances now?

Mr. Sawday.—I cannot specifically but they use plenty of Continental material.

President.—As regards bars the criticism is that you would be making the poor consumer pay a higher price by shutting out Continental steel.

Mr. Sawday.—Yes.

President.—It is said that it was no good compelling him to buy a better article at a higher price, if he did not require it.

Mr. Sawday.—If you put the price up, I presume that it might pay the British people to make untested soft bars. Mr. Mather would tell you all about that.

Mr. Peterson.—Probably they would.

President.—What about you in that case?

Mr. Sawday.—We will do the same. We are doing it now.

Mr. Peterson.—I don't think that the cost of making that steel is anything very much less unless the works make nothing else.

Dr. Matthai.—They generally give a figure of 10 shillings as the cost of guaranteeing the British standard. Does that at all represent the additional cost?

Mr. Sawday.—Presumably.

President.—On page 55 of the Evidence Volume, 1925, you say " We have a contract with the Railway Board for the supply of structural steel of B. S. specification, but the Railway Board have informed us that if the Railways require any plates, bars or sections, the quality of which is not considered to be of importance, they should be at liberty to purchase Continental steel, if it is cheaper." We want to know whether that has taken place.

Mr. Peterson.—The whole contract with the Railway Board no longer exists. We have now no contract with the Railway Board. But I can tell you that the Bengal Nagpur Railway does not think that there is any purpose for which Continental steel is suitable.

President.—Then you say on the same page " The Madras and Southern Mahratta Railway was offered a contract for structural materials at below B. S. S. prices but did not accept and the chief reason for this is that they use Continental materials whenever possible."

Mr. Sawday.—That was so. I again renewed a year ago, *i.e.*, last October my offer at a low price. Again the same difficulty arose

President.—So far as those railways are concerned, the Railway Board have told us that the freight to Madras happens to be so low that unless you quote them a price which is within a measurable distance of the foreign price, they would be justified in not buying from you.

Mr. Sawday.—As a matter of fact I did offer a price to the Madras and Southern Mahratta Railway which was accepted but they wanted a guarantee of delivery within 14 days. It was impossible to do that. Still, one of the conditions of the tender was that. The man who gets the orders must supply from stock.

President.—This point arises more in connection with bars.

Mr. Peterson.—I don't think that we have seen any tendency for the increased use of Continental material as compared with British. The position is very much what it was. I don't think that there has been much change.

President.—On what mills are these bars rolled?

Mr. Peterson.—On the merchant mill and the old bar mill.

President.—Is it worth while protecting the smaller sections now?

Mr. Peterson.—Under ½" we don't want to roll.

Mr. Sawday.—We have been trying to do what you suggest we should do and refuse to roll the sections which obviously cost us more. Half inch rounds cost us more than one inch rounds. Normally we refuse to roll under half inch. It would pay us from the Works point of view to roll nothing below one inch but if we did that, we would not get any bazar orders.

President.—Then the best thing is for you to buy it from outside and supply, and leave it out of the tariff. It is no use burdening the consumer for that reason.

Mr. Sawday.—If we did that, they would buy the Continental material all through and none of ours.

President.—If the tariff was removed, it would not make any difference to you. If you keep in stock rounds, half inch and under, why should you lose yours order?

Mr. Sawday.—People have to order waggon loads and if we don't give what they want they would go elsewhere.

Mr. Mather.—Would the half inch bar be substituted by anything else?

Mr. Sawday.—7/16 or 15/32 might be used instead. The demand may be affected.

Mr. Peterson.—The same thing will happen to 1" if that with limit.

President.—We don't want to make proposals covering things which may not after all matter very much to you.

Mr. Sawday.—With the ½" to 1" included we get wagon orders but without then we should not be able to get wagon loads orders.

Mr. Mather.—You can only get an advantage in freight on wagon loads?

Mr. Sawday.—Yes.

President.—What is the position as regards flats?

Mr. Sawday.—We come down to 1" flats.

President.—One inch is the smallest size.

Mr. Sawday.—Yes.

Mr. Mather.—What about thickness? Do you do 3/16"?

Mr. Sawday.—We don't do 3/16".

President.—Would it affect you very much if ⅜" and thinner were cut out?

Mr. Sawday.—The bazar would it take at all. ⅜" and under meet almost the whole bazar demand.

Plates and Sheets.

President.—*Statement No. 90.* So far as plates are concerned, in June, 1925, you got a price of Rs. 145·58 and in May, 1926, Rs. 143·79, but I see

that the average price realised was only Rs. 131·72. There must have been some severe fluctuations somewhere.

Mr. Sawday.—Look at the 1st class plate price which is Rs. 141·39.

President.—There is not so much fluctuation in that case.

Mr. Sawday.—No.

President.—It is not far short of our estimate which was Rs. 146.

Mr. Sawday.—No.

Dr. Matthai.—What do the dealers want plates for?

Mr. Sawday.—These plates—3/16″ and ¼″ plates—are for making sugar pans, safes, etc.

President.—I should have thought that there was more room for plates in the country.

Mr. Peterson.—We have not got more steel for it.

President.—I don't wish to deal with other products except rails. I think that generally speaking it may be said that prices are getting more stable.

Mr. Peterson.—They have been stable for the last nine months or so.

President.—Taking the whole period?

Mr. Peterson.—They are getting more stable.

Mr. Sawday.—By developing the upcountry market we have been able to keep the prices up but you must remember this that as our output increases, unless we develop our upcountry market by selling small lots—that is a problem we are already after—we are bound to sell more in Calcutta and as we sell more in Calcutta our average price must drop.

President.—Supposing your output increases from 330,000 tons to 420,000 tons, there will be a reduction in your costs.

Mr. Sawday.—Yes. The works profit would increase but not the profit per ton.

Dr. Matthai.—If you increase your output, on the whole it would be better business for you.

Mr. Sawday.—Certainly.

President.—After all, we are more concerned with the aggregate. Supposing you had a bigger market and you put in another 20,000 tons, there is no reason why on 45,000 tons you should not be making more profit than you would make on 25,000 tons?

Mr. Sawday.—Are you not basing our price on the c.i.f. price? You must not take the price we realized in estimating the future price. These are the prices we actually received. If we increased our output the average price must go down, this is very important because you will have to work out duties per ton and will have to look at our realisations as per ton. Those realisations are affected very considerably by the quantity that has to be put on the market.

President.—As I explained to you before in our scheme we have been guided up to now rather by what you ought to get on the basis of the c. i. f price. The point is this. We must get some basis on which we can get an average price for all steel in all parts of India, and for that purpose let us take three or four centres. We will take Calcutta first and then Delhi for the northern side and then Madras and then Rangoon. I think we must leave out Karachi altogether for the present, but we will take Bombay. I want you to give us figures to show—supposing you had to sell at these different centres what price you would get f. o. r. Tatanagar, taking conditions as they are at pre ent.

Mr. Sawday.—Calcutta Rs. 119, Bombay Rs. 104, Madras Rs. 106, Delhi Rs. 150, Cawnpore Rs. 141, Nagpur Rs. 145. These are present prices f. o. r. Tatanagar for untested bars.

President.—Then we have got to find out the extent of the market in each case. Of course you cannot get all the upcountry market.

Mr. Sawday.—I will give you the existing market. Of course there is always a potential market.

President.—As regards the ports we can estimate the market from the official figures but as regards the interior it is purely a conjecture. Are these the principal centres or are there any others where there is a substantial market?

Mr. Sawday.—These are the principal ones for bars.

President.—What do you say for Burma?

Mr. Sawday.—Burma would be 2 rupees less than Madras.

President.—If you work out the c. i. f. prices in these different ports and if you assume that the c. i. f. price in Calcutta is the same as in Rangoon you might get less.

Mr. Sawday.—It is very much the same.

President.—Steel imported to Burma is said to pay less freight than it would if imported to Calcutta.

Mr. Sawday.—Bombay, Karachi and Calcutta nearly the same, Madras and Rangoon half a crown extra.

President.—Take British material: I think it is important for you to find out what the freights are to the Indian ports.

Mr. Sawday.—We will give you the information. I will give you the coasting freights too if you like.

President.—I don't want a large number of figures. Take one particular month, say, March. Take March c. i. f. prices to Calcutta and then say so much to Madras, so much to Rangoon, so much to Bombay and then say in order to compete against these prices you should get f. o. r. Tatanagar so much. That is the sort of information we want.

Mr. Peterson.—Rangoon 23/6*d.*, Calcutta 16/6*d.*

President.—In the case of Rangoon you have got to add freight from Tatanagar to Calcutta and Calcutta to Rangoon. The kind of information that we want is to enable us to see what the exact position is as regards your freight and their freight.

Mr. Mather.—How did you fix the price of plates for the engineering firms say for the first quarter of this year? Was there any agreement to pay on the basis price of the British plate?

Mr. Sawday.—Plates 5/16ths and more, except for Burns, are Rs. 5 more and thin plates are Rs. 15 more, the joists and narrow plates below 25" wide Rs. 10 more than that. Burns used to pay on a different basis but they are all fixed on the joist basis now.

Mr. Mather.—I was trying to compare the prices you received from engineering firms with the actual realized price of British plates for the quarter ending March 1926.

Mr. Sawday.—They are all fixed on the joist basis.

Mr. Mather.—They seem to be rather lower than the actual selling price of British plates. Why is it fixed on the joist basis instead of on plates?

Mr. Sawday.—It has been always fixed on that basis. In 1924 the Tariff Board commented on this and we put on more extras but have struck to the joist basis for convenience, I once tried to get plates out on home basis with extras but our customers proved to me that home works had dropped all extras at that time so I abandoned the attempt. We have pressed the Engineering Firms so much for better prices that I have not thought it wise to worry them too much.

President.—Plates are 3/8" and upwards?

Mr. Sawday.—3/16ths and up.

President.—I take it that here also you would probably be competing mainly against British plates?

Mr. Sawday.—Yes, as far as our present output goes.

President.—There must be a certain percentage of untested material in every case?

Mr. Sawday.—We do not make any untested plates at present because we have to compete against plates up to the British standard specification. About the middle of 1925 we were selling some untested.

Mr. Mather.—The articles which you have entered here (statement No. 90 of the blue book) as cuttings, what are these precisely?

Mr. Sawday.—Scrap.

Mr. Mather.—You sell that at a certain price. Is that price which you realized from these sales taken into account in the credit for scrap in your works cost or is your plate mill scrap all credited at Rs. 20 per ton?

Mr. Sawday.—Cuttings are different from second class. Second class means plates with defects.

President.—That would not raise the average.

Mr. Peterson.—That is not excessive.

Dr. Matthai.—Would you find it difficult to dispose of the cuttings?

Mr. Sawday.—Yes. We are finding it difficult to dispose of the cuttings now.

President.—Then you have to use them as scrap, that is all?

Mr. Sawday.—We are selling all we can and have to melt the rest.

President.—What are these cuttings used for?

Mr. Sawday.—Ploughshares, powrahs, and things like that.

Dr. Matthai.—Do you find any galvanized sheets coming from the Continent?

Mr. Sawday.—They are just trying to export; but the quality has so far been unsatisfactory. Since the last few weeks a few orders have been placed at 10 shillings below the British price.

Mr. Mather.—Presumably owing to the difficulty of getting British materials?

Mr. Sawday.—Apparently yes.

Mr. Mather.—Do these chiefly come from Belgium?

Mr. Sawday.—Yes.

Dr. Matthai.—What is your feeling about the market for galvanized sheets in the near future? Is it going to continue in the near future on the present scale?

Mr. Sawday.—The raiyats have had a very good time in the past, but this year owing to the communal riots and the fall in jute and other causes the demand for galvanized sheets and prices must go down.

Dr. Matthai.—Do you think it will vary with the monsoon?

Mr. Sawday.—Yes. It depends on the price of jute and other things.

Dr. Matthai.—You don't have any faulty sheets in plain galvanized?

Mr. Sawday.—Only good sheets are sold plain. Those which are not very good are corrugated.

President.—In June 1925 the average price of rails was Rs. 127·91, in May 1926 it was Rs. 109·12 but in March it was lower still, Rs. 105·47.

Mr. Sawday.—That is right. That represents orders for the Palmer railways.

Mr. Mather.—The April figure was higher. That was an indent from the State railways?

Mr. Sawday.—Yes.

President.—But still your average works out to Rs. 125·92.

Mr. Sawday.—Rs. 122-8 for the Palmer railways and Rs. 130 for State Railways.

President.—Our estimates was Rs. 140 for rails.

Mr. Sawday.—Yes.

President.—You are out as far as March is concerned by Rs. 15. In May you got Rs. 109·12. Whose order was this?

Mr. Sawday.—Bombay, Baroda and Central India Railway.

President.—Have you received any news about the international rail combine?

Mr. Peterson.—We have absolutely no definite information but I understand that the minimum price for export would be £6.

Rails.

President.—The minimum price f. o. r. works.

Mr. Sawday.—Yes. You would be further interested to hear that last week 75 lb. rails were sold by us at Rs. 120.

Dr. Matthai.—How long ago was that?

Mr. Sawday.—Last week.

Dr. Matthai.—What railways.

Mr. Sawday.—Patiala State Railways.

President.—That means a price of £7 f. o. b. British Port.

Mr. Mather.—It also appears to have been decided that Continental manufacturers will not compete in South Africa and India until the British quota is satisfied.

Mr. Sawday.—Yes.

President.—Would the Patiala State get the special rate for rails?

Mr. Sawday.—The Patiala State Railways are run by the North Western Railway. The State is constructing this line and will hand it over to the Railway Board.

President.—*Statement No. 95.* As regards second class rails there has not been very much fluctuation. The average is Rs. 67·58. What determines the price of second class rails?

Mr. Sawday.—Our limit for 90-lb. rails has been Rs. 40. They are sometimes taken for short joists but there is little demand. There is a good demand for 60-lb. lighter rails f. o. r. 75 lbs. we are largely dependent on the Port Trust for 90 lbs. there is no demand.

President.—For what sections do you get the highest price?

Mr. Sawday.—Light rails.

President.—That is what?

Mr. Sawday.—50 lbs. and 41½ lbs.

President.—For that how much do you get?

Mr. Sawday.—Up to Rs. 85.

President.—First class would be considerably heavier.

Mr. Sawday.—No. The Government railways come down to 50 lbs.

President.—How much is that?

Mr. Sawday.—The usual Rs. 130.

President.—Still lighter rails go as structurals.

Mr. Sawday.—Yes. What are known technically as light rails, *i.e.*, 14—24 lbs.

President.—You take credit for the whole of the second class in your works cost and I see that it doesn't affect the average.

Mr. Peterson.—No.

Dr. Matthai.—The demand for second class rails is influenced by the same kind of forces as the demand for structurals.

Mr. Sawday.—Second class rails are used as short beams in upcountry. Otherwise the only big demand for second class rails come from the engineering firms and the Port Commissioners.

Fishplates.

President.—*Statement No. 96.* Then as regards fishplates what is the percentage of fishplates to rails?

Mr. Sawday.—It varies with the tonnage (statement handed in).

President.—Between 4 and 5 per cent.

Mr. Sawday.—Yes.

President.—You get a fairly good price for fishplates.

Mr. Peterson.—Yes, about Rs. 30 more.

President.—The average is Rs. 158·34. It is a better price in comparison with rails.

Mr. Sawday.—Yes.

Mr. Peterson.—The extra is only Rs. 30 a ton. We put it up to Rs. 70 a ton and we got Rs. 50 a ton extra above the price of rails.

President.—But as a matter of fact generally you are getting only Rs. 30?

Mr. Sawday.—Yes. That is because of the existence of the Railway Board contract.

President.—*Statement No. 97.* Light rails these are 16″ mill rails.

Mr. Sawday.—Yes.

President.—The average price there is Rs. 130·33. It is less than the other sections.

Mr. Sawday.—Yes. The competition in light rails is very keen.

President.—By whom are they used?

Mr. Sawday.—By tea gardens, collieries and quarries. There is no specification for it.

President.—Light rails are 30-lb. under?

Mr. Peterson.—We are refusing to roll 30-lb., we roll 24, 18, 14-lb. rails.

Mr. Mathias.—You have got a statement on page 22 of your representation in which you have stated the selling price of the various products. Where do the fishplates come in?

Mr. Peterson.—This statement will exclude the fishplates altogether.

Mr. Mathias.—In 1926-27 do you include rails for the Palmer group of railways?

Mr. Peterson.—Yes.

Mr. Mathias.—You have got a heading "rails." Where does the bounty come in there? Does that come under bars?

Mr. Peterson.—The fishplates would come under bars. There are also a certain amount of fishplates in the statement on page 21. You have to take the two statements together.

Mr. Mather.—Did you see a telegram in the "Englishman" about a fortnight ago that some syndicate has been formed for controlling the output of Continental steel? Have you more information about that?

Mr. Peterson.—No.

President.—But your firm will keep you informed as to what is going on?

Mr. Peterson.—We shall get that information by mail. We have no information about the Syndicate of that kind. We are getting weekly reports from a firm in Berlin which would give us any information of that kind. The last report I got was 15th July. (Read.)

Dr. Matthai.—If the thing were actually settled, won't you get a telegraphic report from the London Office?

Mr. Peterson.—We would get any information both from these people and from the London Office. We have got information about the proposed syndicate of wire and wire nail manufacturers.

Steel Sleepers.

President.—We will now go into the question of steel sleepers. You were recently asked to quote for about 100,000 tons of steel sleepers?

Mr. Peterson.—We were not actually asked to quote for a definite quantity. We were told that large orders were contemplated. We were also told that the design would be somewhat different to the one that we were making but that it would not affect materially the cost. This is the telegram that we got from the Railway Board on the 5th of July, 1926:—" Our requirements will be at least 100,000 tons to be delivered in 1927-28 but we must reach decision July 8th at least. Can you therefore send me reply by that date and earlier if possible."

President.—They mentioned 100,000 tons.

Mr. Peterson.—That is for 2 years, and our maximum capacity is only 25,000 tons per annum. We replied as follows:—" Our maximum capacity steel sleepers 25,000 tons per annum. We would gladly take orders for this quantity provided price is suitable. This depends on the question of protection and we have already applied to Tariff Board for protection on steel sleepers. Suggest that if sleepers are required it is essential India should develop her own supplies and that therefore order 25,000 tons per annum of one pattern be placed with the Steel Company, price to be decided on Tariff Board's report. We will agree to accept any price fixed by Government after consideration of this. Important that all sleepers should be to one standard pattern. We could not at present spare more than 25,000 tons per annum for sleepers but could at any time greatly increase output if required and if price suitable; our works costs for next seven years are shown in our representation to Tariff Board, of which Innes has copy, Statement pages 32 and 33.....If large orders placed at once we can probably reduce costs to Rs. 90 within year or two." The information we have got is that the Railway Board contemplated placing the order and they could not wait. So, they placed the order abroad.

President.—It was a fairly big order. Would it not have been better if you had quoted?

Mr. Peterson.—What are we to do? We can only give the reply that we gave.

President.—In the first place you did not quote at all.

Mr. Peterson.—Could we quote on that? We said that we would accept any price which would be fixed by Government.

President.—You ought to have quoted on your own works costs and on what you considered the world price at that time.

Mr. Peterson.—I could of course have quoted in competition with the world price. That would mean a tremendous loss to the Steel Company. Obviously we could not quote on that figure.

President.—My point is that this is not the way to quote.

Mr. Peterson.—The answer is that we are not prepared to quote unless we know what protection we are going to get.

President.—You cannot put Government to terms in that way.

Mr. Peterson.—There is no use in them asking us for tenders like that.

President.—When we go into your works cost with you and Mr. Alexander, we shall be able to see whether you could have quoted but my point is that that is not the way to quote at all. It was a fairly big order.

Mr. Peterson.—It is no use quoting Rs. 155 a ton. That is obvious. That is the only quotation which we could have given. Otherwise I entirely destroy my own case.

President.—Your works cost last April was Rs. 103.

Mr. Peterson.—The works cost in 1927-28 is Rs. 105 and in 1928-29, Rs. 102-8-0.

President.—You actually got down from Rs. 119 in January to Rs. 103 in April.

Mr. Peterosn.—I really offered in this telegram to quote the works cost of Rs. 90.

President.—Why didn't you quote?

Mr. Peterson.—I took a pronounced risk in quoting Rs. 145.

President.—Why should you quote Rs. 145?

Mr. Peterson.—I only take Rs. 90 *plus* Rs. 57-8-0.

President.—Rs. 57-8-0 could hardly apply in this case.

Mr. Peterson.—Then, it would be better to put that steel in to some other material to which it does apply such as bars.

President.—Here you have got an order. It is a very easy thing to produce, the market is good and the railways are very good paymasters. You don't really calculate. You simply add Rs. 57-8-0 to Rs. 90 and say that this is going to be your price. I wish to point out to you that that is hardly the way to do business.

Mr. Peterson.—May I read the letter from Mr. Parsons.

President.—If you want it to go down in evidence.

Mr. Peterson.—This is not a private matter. This is the way in which it came to us, and I had to reply within 24 hours. I don't think that the Steel Company can be blamed for not being able to quote.

President.—That is a matter of opinion.

Mr. Peterson.—This is the letter that I got:—"We have had a day or two ago an offer from Europe of 50,000 to 100,000 tons (but not less than 50,000 tons) of steel sleepers at the price ruling prior to the recent rise. We shall not in a position to decide what quantity, if any, of steel sleepers we shall want for next year until the Sleeper Pool Committee meets here next week; but supposing we then found that we shall require something between 50,000 and 100,000 tons of steel sleepers for delivery in 1927-28 would the Tata Iron and Steel Company be prepared to take the order, and, if so, at what price? We might require the sleepers to be of a slightly different pattern to those they are already making but the design would in any case not be more expensive to produce. It will help me a lot if you can let me have a very early reply." How can the Steel Company quote on an information like that? We do not know what the pattern is, what the quantity is and what the delivery is.

Dr. Matthai.—This is the only communication that you had.

Mr. Peterson.—That is all.

President.—You should have enquired if it was an offer.

Mr. Peterson.—I said "On the Tariff Board's report fix your own price and we will supply." I don't see what other offer we could have made. I was taking a very pronounced risk in sending that telegram. There was no time to put that before our Board. I only consulted Mr. Alexander.

President.—I don't think that it is fair to tell the Government "offer your own terms subject to the report of the Tariff Board."

Mr. Peterson.—This is on the assumption that it is 100,000 tons which is a quarter of our total production. Supposing you gave us protection and then found that we had already contracted out of that protection for 100,000 tons, you would blame us and very properly.

President.—This is a big order.

Mr. Peterson.—The bigger the order the worse it is for us.

Dr. Matthai.—Your contract price is Rs. 8-12-0 per sleeper.

Mr. Sawday.—Yes.

Dr. Matthai.—Is it not worth your while to quote at that price?

Mr. Peterson.—No. There is another point. We are under contract to supply the Palmer Group with all their requirements of steel sleepers. If they demand it, how can we quote at all?

President.—But, say that you are not in a position to supply them.

Mr. Peterson.—That is what I have said in practice.

President.—Quoting in such a way is not quoting to my mind.

Mr. Peterson.—I put it to Government if they want steel sleepers and they have really not made up their mind on that—

President.—The point is this. If we recommend the kind of duty that you propose, then they may not use steel sleepers at all. They may turn to cast iron sleepers.

Mr. Peterson.—We have suggested a bounty because we are limited by our contracts. The bounty will not affect that. If steel sleepers are not used, we shall not get the bounty.

President.—The position is this. If sleepers were cheap enough and if there was a sufficient inducement for the railway companies to use steel sleepers, you would get nearly as many tons of sleepers to sell as rails. Therefore it is a much bigger proposition than appears at first sight.

Mr. Peterson.—I have been very keen on it all the time.

President.—Would one ton of steel rails require one ton of sleepers approximately?

Mr. Peterson.—About that. If the steel sleepers had not been omitted from the first scheme, it would have been possible for us to quote. As they have been deliberately excluded from the protective scheme we cannot quote until we know what the protection is going to be.

President.—We excluded sleepers as you could not make them.

Mr. Peterson.—Our point is that we were blamed for making long term contracts.

President.—This is not a long term contract.

Mr. Peterson.—This is for two years.

Dr. Matthai.—Protection cannot be given in the shape of tariff because of the contract.

Mr. Peterson.—That would be the difficulty.

Mr. Mather.—You just told us that assistance should be given by bounty in the case of steel sleepers. If the Tariff Board were to decide to recommend protection, you would still have got whatever benefit was proposed.

Mr. Peterson.—I was taking a pronounced risk in saying "you consider the report and fix the price."

President.—The position as regards sleepers is this. The pre-rise price was £6-17-6 to £7, and it was going to be raised to £8-7-0. Before this new price became effective, they wanted to buy the sleepers.

Mr. Sawday.—Is this f. o. b.?

President.—Yes. The price of £7 is equal to Rs. 119-2-8. If you add 27 shillings, it would be another Rs. 20.

Mr. Peterson.—Yes.

President.—Therefore it is for you to have considered whether you should not secure to yourself a fairly large and reliable market. In your works cost there is no attempt to work out any such figure as Rs. 125. If you calculate your costs on an output of 5,000 tons it is obvious that you cannot compete. But if you calculate your works cost on an output of 25,000 or 50,000 tons,.....

Mr. Peterson.—Then, we could reduce the works cost. Do you think that our costs should go down still further?

President.—I certainly think so. Please look at your last statement.

Mr. Peterson.—The lowest figure was Rs. 103.

President.—That was for April.

Mr. Peterson.—That was for April.

President.—On an output of 392 tons you cannot expect your costs to be very low. The sheet bar that you are using is coming down steadily. My point mainly is this, that you estimated your cost on a very small production

and you have not made sufficient allowance for the reduction in your sheet bar, and then, as I said, you add Rs. 57 which will not be really speaking the proper amount to add to sleepers.

Mr. Peterson.—I have not added any amount; I have given the works cost and stated what we consider a fair price. I may tell you again that we were not actually asked to quote. We did not even know whether they would after all require sleepers or not, and I was asked to quote within 24 hours against as I supposed Continental sleepers—I was not given the price—for 50,000 to 100,000 tons to be delivered in equal quantities in two years! We would have quoted, but they said " We shall not be in a position to decide what quantity, if any, of steel sleepers we shall want for next year until the Sleeper Pool Committee meets here next week." Then in their telegram of the 5th July this is what they said " Our requirements will be at least 100,000 tons to be delivered in 1927-28 but we must reach decision July 8th at least....." That telegram reached me on the 7th.

President.—What was your reply?

Mr. Peterson.—I have given you the reply.

President.—In that telegram did he not mention the quantity?

Mr. Peterson.—But he does not say definitely the quantity and at the same time he says " We must reach decision July 8th at least " and that telegram reached us only on the 7th. As I understood the letter this would be the requirement *if he required sleepers at all.* I got the letter after I got the telegram. The letter is perfectly plain.

President.—That telegram I take it was repeated to you by your Bombay office?

Mr. Peterson.—Yes.

President.—That telegram of the 5th July was a definite request to quote, was it not?

Mr. Peterson.—The letter said that they were going to decide on the 8th whether they were going to use steel sleepers or not " until the Sleeper Committee meets here next week." It does not tell me whether the Sleeper Committee had met. This is not the usual way in which the Government of India call for tenders: they are supposed to invite tenders. If they expect us to quote within 24 hours without telling us whether they have decided to purchase steel sleepers or not and what the quantity was going to be, it is impossible for us or for anybody else to quote.

President.—You have apparently misunderstood the position. That telegram appears to be a definite request to quote.

Mr. Peterson.—I do not read it that way. They simply say " our requirements will be at least 100,000 tons, can you reply to my letter "?

President.—They definitely say in their telegram that they require so many thousand tons of sleepers, don't they?

Mr. Peterson.—This is not the way in which the Government of India are supposed to ask for large tenders. What happened was that they got an offer at a very low price and instead of calling for tenders they asked us to quote, and that within 24 hours without knowing what the design was going to be, what the quantity was going to be and what the delivery was going to be!

Dr. Matthai.—Don't you make them to a standard size?

Mr. Peterson.—We make them to a standard size but the Railway Board have never decided what design to adopt. In one particular case we offered a pattern which costs Re. 1 less to roll, and they accepted it but the order has not taken. In this case we do not know what the design might be: it might not suit us at all and I do not see that it was possible for the Steel Company to quote on this letter and telegram. I think the Steel Company would be very chary about quoting any price under those conditions. We do not even know now whether this order placed by the Railway Board abroad includes supplies for Railways who are already under contract to us. And we do not know now what the design is.

President.—I have put to you the case of the Railway Board. They say they made this offer about the 5th July but you did not take it as an offer and said that you were not prepared to quote definite price till the Tariff Board had reported on the question.

Mr. Peterson.—That is the exact position and I think the Company would be extremely foolish if they did quote and the Tariff Board would have blamed us, for making a contract which prevented us from getting the full benefit of any protection that they might recommend.

Dr. Matthai.—There was no harm in quoting a fair price instead of bringing in the question of protection. You might say this is our fair selling price; if they were prepared to accept it, let them. That would obviously have been the business like course.

Mr. Peterson.—That is what we did. We gave them our works costs and told them to fix any price they liked.

Dr. Matthai.—But they do not know how much to add on the works costs.

Mr. Peterson.—Any figure that the Tariff Board found reasonable. If I quoted a definite figure I am bound to that figure whatever the protection is going to be.

Dr. Matthai.—May I know what the position is under the contracts with the railways?

Mr. Peterson.—Except the Bombay, Baroda and Central India they have not decided as to what pattern they want.

Dr. Matthai.—It depends entirely on them; they can ask you to produce?

Mr. Peterson.—Yes, of the pattern under the contract. But there have been great alterations in the pattern and probably they do not want the pattern we are manufacturing. What they want is a different kind of sleeper. The present pattern is a sleeper in which the steel is pressed up. It would be quite a different thing altogether.

Presidetn.—Would that present any serious difficulty in manufacturing?

Mr. Peterson.—It might. In this matter I am going entirely by the advice of my experts.

Continued on Tuesday, the 10th August 1926.

Estimate of future costs.

President.—I want you to look at your estimated future costs (page 26 of the blue book). I cannot go into them really now until you give me some revised estimates. Undoubtedly from your point of view it is better to keep yourselves on the safe side, but if we were to do the same, from our point of view we might have to cut down the costs below what might be reasonable limits. I think you will realize that it is advisable that the estimates should be as near as possible to the actual figures you hope to reach. I will just give you one or two instances to show how your estimate is really far too much on the high side. Take your 1926-27 estimate; there the average works cost is Rs. 98·46 and in 1933-34 you come down to Rs. 92·37, or by Rs. 6 per ton.

Mr. Alexander.—That is with an increase of Rs. 2 in the price of coal.

President.—Take the item of coal alone in 1933-34. Supposing you reduced your coal by what you anticipate, from 3·81 to 3·1, that is about $\frac{7}{10}$ths of a ton. The price in 1933-34 is taken at Rs. 7 at the collieries which is the equivalent of about Rs. 8-10 at the works. The price of $\frac{7}{10}$ths of a ton is about Rs. 7. Then the saving of $\frac{7}{10}$ths of a ton does not merely mean a saving in the price of coal; the on-cost will probably be about 40 per cent. on that, so that it means a saving of Rs. 8 or Rs. 9 on those figures. Again by that time you would have closed down your old mills according to this programme. I think we made some calculations last time and we thought at present you were running the mills at a loss of Rs. 15 to 20 lakhs per year. That means Rs. 3 or 4 a ton. These two items alone ought to reduce your costs by considerably more than Rs. 6 you have given without making any allowance whatsoever for improvement in practice, increase in output and so on, I think you should again go over each item separately and see how far you can reduce your estimate.

Mr. Peterson.—What price should we take for coal?

President.—Rs. 8 right through at the works.

Mr. Peterson.—For what period?

President.—For the period you have given in this estimate. You can make it ten years if you like. But warn you that I might make bigger reductions if I do not understand the figures.

Mr. Peterson.—If you think these costs do not come down sufficiently. I want to raise a general point there. Over a period of seven years there might be an increase in the price of other materials, we have not calculated how far. There is also certain to be the usual world movement and a general rise in price all over the world.

President.—You can say these are the items which you may have to consider and make adjustments afterwards, but do not bring them into this.

Mr. Peterson.—I think I am right in saying that we have given what we took to be a safe figure.

President.—Let us see how your estimate works out on the present, I mean April, May and June costs. The most important things are pig iron and the ingots?

Mr. Alexander.—Not from our view point. We have to take the finished product to see what money we are going to earn.

President.—Except in the old mill?

Mr. Alexander.—But the average is still above the average estimate for the total tonnage.

President.—In every finished product you have come down except in the old mills. I am just trying to show that your estimate for 1926-27 is in some respects already on the high side on the last three months working.

Mr. Alexander.—And on the low side in some respects.

President.—Not very much, considering that April, May and June are not ordinarily the best months of the year. I am just trying to point out to you that if you are already out in your estimate for 1926-27 on the result of the three worst months of the year, it is quite possible that you may be far out in the other months of the year.

Mr. Alexander.—The total is higher. Our actual for the three months is still above Rs. 98·46.

President.—I don't know how you arrived at that result. Take these items. In the open hearth you gave the average at Rs. 53. You have already reached Rs. 52·5 in June which is not a good month. Take your rails. Your estimate is Rs. 85. You are already down to Rs. 81·88, just under Rs. 82. Your pig iron is Rs. 27. You are already down below Rs. 27 in June which is not a good month.

Dr. Matthai.—What is your actual average for these months?

Mr. Alexander.—About Rs. 101 or Rs. 102.

President.—It may be. But I think it is in the old plant chiefly that you are out.

Mr. Alexander.—We are selling bars.

President.—I am trying to point out that these figures as you have taken them are really high. As an expert perhaps you are entitled to keep yourself on the safe side absolutely. On the other hand you must realise that we have the responsibility also of keeping ourselves on the safe side. Take your black sheets. Your estimate is Rs. 175. You have come down to Rs. 169·32 in the first 3 months working.

Mr. Alexander.—On the other hand the galvanized which we sell are out by Rs. 17 the other way.

President.—Does it mean plain or corrugated?

Mr. Alexander.—Corrugated.

President.—In corrugated you are only out by Rs. 5.

Mr. Alexander.—Are you taking June costs?

President.—Yes.

Mr. Alexander.—I was taking 3 months costs.

President.—I don't want the 3 months average at present.

Mr. Alexander.—You want to pick out the best.

President.—June will ordinarily be one of the worst month, if not the worst you are only out by Rs. 5 on the corrugated sheet in that month.

Mr. Alexander.—One thing you must bear in mind and that is this: The farther we go the harder it is to make a reduction. We reach a point where it is not so easy to make further reductions.

President.—I am pointing out that you should realise the importance of giving me an estimate which is really more in accordance with your experience.

Mr. Alexander.—How much can I keep on the safe side?

President.—Do it at your own risk. You may find that you were playing for safety more than was necessary.

Mr. Peterson.—Do you want us to revise that estimate in the light of 3 months experience from March?

President.—For instance take the coke ovens. You may remember that when we were discussing them at Shillong I drew your attention to the fact

that your coking time had come down by 10 per cent. and then I told your that this was not reflected in the cost. Your answer was—it was a right one—that you were repairing some of the ovens. For that reason the costs didn't go down in the same proportion. But the 10 per cent. saving in the coking time must eventually tell.

Mr. Alexander.—Can we go on and get another 10 per cent. as easily as that?

President.—You have not got the results in the costs, because as you yourself explained, at that time the ovens were not fully at work. When that has been done the effect of that 10 per cent. must be reflected in the costs. There are many points like that. For that purpose I thought we might adjourn for a day and take you again on Friday. To-morrow we can go on with Mr. Peterson, Mr. Sawday and Mr. Temple so that you have two days.

Mr. Peterson.—Do you want Mr. Alexander to see whether these estimates can be revised?

President.—Having regard to the improvements you wish to effect, and to the fact that the plant will have been in full operation for two or three years.

Mr. Peterson.—What you want us to do is to revise the estimate in the light of 3 months experience?

President.—Taking into account any factors that were lost sight of before by you.

Mr. Alexander.—Rs. 8 coal, all other materials are the same.

Mr. Mather.—Not necessarily the same per ton of steel.

Mr. Alexander.—If you ask us to give you our estimates, we must take these points into consideration.

President.—I am prepared to take any facts into consideration by themselves, but do not say that you made allowance for this factor and that factor in cutting down or increasing your estimate. Show those factors separately.

Mr. Alexander.—2 days won't give me sufficient time to make out each year's cost separately—*i.e.*, to take the final figure and reallocate in between.

President.—Start from the costs of 1925 and 1926 onwards. Take these last at one end and the final figure you expect to reach at the other end. Say after 7 or 10 years, whichever you prefer.

Mr. Alexander.—10 years I would. It would give you a fair estimate.

Dr. Matthai.—Is the suggestion this, that we are going to revise this estimates on the basis of what has been actually done these 3 months?

Mr. Peterson.—That is what I understand.

President.—The point is this. I consider that these estimates are not very accurate and one of the tests by which I judge is the experience of the last few months. That is not all. I want you to give me a better estimate taking all the factors into account.

Mr. Peterson.—We will take 1926-27 and 1936-37 and we will take the cost of coal at Rs. 8.

Dr. Matthai.—In addition to that you will give us a statement as to what sort of fluctuations might be possible during this period in regard to the main items.

Mr. Alexander.—The simplest thing is to get out a new estimate for 1936-37.

President.—In a note you can mention any factors which are liable to variation.

Mr. Peterson.—Shall we take exchange at 1*s.* 6*d.*?

President.—Yes.

Mr. Peterson.—That will make a considerable alteration in the stores that we purchase.

Dr. Matthai.—That doesn't affect you much.

Mr. Peterson.—It will. We buy a great deal of stores from abroad.

President.—The best thing for you is to take the exchange at 1*s.* 6*d.* Then if you think that labour may go up you may state what adjustment you could make, and so on with other thing.

Mr. Alexander.—Freights may go up.

President.—As I say you can explain all that in a note.

Mr. Peterson.—The most important one is the freight. Surely that will affect our works cost.

President.—Probably it may have a cumulative effect in each department.

Mr. Alexander.—You want as estimate for 1926-27. There are some cases where I am too low. If they are low, can I raise them?

President.—We have examined other witnesses and they think they don't expect any rise in the price of coal.

Dr. Matthai.—These three months you have taken at Rs. 7.

Mr. Alexander.—Slightly over Rs. 7.

Labour.

President.—About labour, these tables only account for about 20,000 men. In the operating departments I understood you had about 26,000 men actually working and about that you had 30,000 on the rolls all together.

Mr. Alexander.—That includes the weekly labour.

President.—I took the direct and indirect labour given in the statements starting with No. 57. Where do all these 10,000 people work?

Mr. Alexander.—It includes weekly coolies in the departments, but it doesn't include transportation and other auxiliary departments.

Mr. Mather.—The President's point is that it leaves an enormous number of men over and he wants to know where those men work.

Mr. Alexander.—They work in the outside departments which have nothing to do with the individual departments under consideration.

President.—I suggest that you take a surprise census once, any particular day or night and see whether you have got 30,000 men.

Mr. Alexander.—I could not check them all in one night.

President.—That is for you to arrange.

Mr. Alexander.—We get daily force returns from the individual departments quite independent of the Time Office. We know that we are paying for some labour which is not working all the time but it is getting less and less.

President.—I want to know whether it would be possible for you to get all cost figures summarized under the main heads in all the departments in this way—labour cost throughout from the ore to the finished steel, general works expenses, cost of materials, etc. I want the figures for only two years, *viz.*, 1921-22 and 1925-26.

Mr. Peterson.—Tell us the form in which you want these figures.

President.—I have not thought out the exact form, but give them somewhat on the lines of Statement No. 29, on page 87 of the Blue Book recently published.

Mr. Alexander.—Do you want it per ton?

President.—Yes. You had better take rails as a typical product. I just want to see how you are progressing under each main head.

Mr. Peterson.—What are we to do with the sulphuric acid?

President.—It is a small thing. Take credit for that and other by-products.

Mr. Alexander.—There is the difficulty of allocation as to how much of the blast furnace labour should come in here.

President.—That is in proportion to the tonnage.

Mr. Alexander.—We will have it done.

Blast Furnaces, a comparison.

Mr. Mather.—The President asked me to look at these statements giving us a comparison of your practice in A and B of your blast furnaces for 1921-22 and 1925-26. The comparison is to see what difference in practice has been obtained in those 4 years. Then again we want to make a comparison between A and B on the one hand and C and D on the other for the year 1925-26. I find—keeping in mind for the moment A and B furnaces only—the tonnage per shift has gone up from 174 in 1921 to 220 in 1925. That shows larger output. The number of men in 1925-26 was rather lower than in the earlier year and the output per man has gone up by 22·6 per cent. in those four years.

Mr. Alexander.—Yes.

Mr. Mather.—But the labour cost has only fallen by 10 per cent. Although the output per man has gone up by 22·6 per cent. the wages cost per ton for that year has gone up by 11 per cent. Is that accurate?

Mr. Alexander.—The number of men employed has gone down slightly.

Mr. Mather.—But not very much. I have already taken that factor into account.

Mr. Alexander.—The cost of labour per man has gone up.

Mr. Mather.—The wages per man have gone up. Does that apply generally to the works?

Mr. Alexander.—That is due to the increase in the bonus and there have been some other increases.

Mr. Mather.—Does it mean that the normal rate per man had gone up or that you were actually employing a bigger proportion on a higher rate of pay?

Mr. Alexander.—That is what actually happend to a certain extent. I was expecting the difference to be even more. We thought that we would have more men to-day than we had previously because we are putting more iron in the pig iron yard now than in 1921-22. That means more handling but there has been a decided decrease in the covenanted staff and an increase in the Indian staff.

Mr. Mather.—What it means is that the Indian staff in the blast furnace is getting more per head and, on the other hand, the covenanted hands have actually earned more bonus on account of the increased tonnage though their rates of bonus per ton are the same?

Mr. Alexander.—Yes.

Mr. Mather.—I notice that there has been a fairly substantial difference between these two years in the nature of the materials used in the production of pig iron. You used in 1925-26 less ore and a good deal more scrap. You used practically no scrap in the first year. By the way, there is a small point about scrap which I am not quite clear about: you show no scrap produced in 1921-22?

Mr. Alexander.—It goes round in a circle. It is neither produced nor consumed.

Mr. Mather.—What it means is that if the scrap went back into the furnace it was not shown in the records at all, but in 1925-26 it is shown?

Mr. Alexander.—That is correct.

Mr. Mather.—In 1925-26 11 per cent. of your pig iron was produced from scrap?

Mr. Alexander.—Yes.

Mr. Mather.—If you take it that the time required merely to melt the scrap is negligible, that in itself would account for an extra output of about 19 tons per shift, so that if it had been comparable on that basis, your output per shift instead of going up from 174 to 220, that is 46 tons, would have actually gone up by about 27 tons, or say 30 tons per shift due to better practice. I think both these furnaces have been relined in the interval?

Mr. Alexander.—A was relined in 1923 and B in 1924.

Mr. Mather.—Have the lines been altered?

Mr. Alexander.—No.

Mr. Mather.—To what do you attribute that increase of 27 tons per shift?

Mr. Alexander.—Blowing more wind, burdening the furnaces better and changing from dolomite to limestone.

Mr. Mather.—In 1925-26 the bulk of your flux was limestone?

Mr. Alexander.—Yes.

Mr. Mather.—If you look at the fuel consumption, that appears to have gone down by over 200 lbs. of coke per ton of pig iron.

Mr. Alexander.—It takes only 300 lbs. of coke to melt a ton of scrap.

Mr. Mather.—It would not take as much as that. I have melted iron even in a cupola with 1½ cwts. of coke per ton. If I allow this amount for the scrap re-melted in your blast furnace, it means that for the production of pig iron from ore in 1925-26 you were using 2,986 lbs. of coke per ton as against your consumption in 1921-22, which was 2,963 lbs., so that leaves you still with a higher coke consumption per ton of iron.

Mr. Alexander.—In 1921-22 we were making mostly basic iron; we are now making foundry iron.

President.—What is the difference in the total cost in that sense?

Mr. Alexander.—2 or 3 rupees a ton.

Mr. Mather.—On coming to the cost above material I see, you have entered in your form in the cost above material credit for gas and that has gone up from ¾ of a rupee to a rupee and a quarter. Of course it is quite possible that you are making better use of it. I would rather consider the cost of conversion without the credit. Credits may go up and down due to working in other departments, so I have ignored that for the moment. Your cost above material to Rs. 8·78 a ton in 1921-22 and to Rs. 7·97 in 1925-26, so that the reduction in the cost above material is only 9·2 per cent. which is a good deal less than the increase of output I think you have distributed it over a considerable number of items, but it looks as though the increase in output has not been reflected by anything like the proportion of reduction in the cost above material, and that if you had not been using that extra amount of scrap your cost above material per ton would actually have been rather higher than it was in 1921-22.

Mr. Alexander.—We will have to analyse that before I could give you a definite reply.

Mr. Mather.—We want to see what really is going to happen to your blast furnace costs and we have got a comparison here for two years. So far as these two furnaces are concerned, there does not appear to have been any fundamental improvement between these two years; the apparent improvement is very largely due either to the price of coke or to the use of scrap.

Mr. Alexander.—We could not expect to reduce our labour cost because most of our iron was formerly basic, which went away in ladles and now it is foundry which has to be cast in pigs and handled.

Mr. Mather.—But does not most of it go to the pig machines where there is little manual labour?

Mr. Alexander.—No, most of it goes into sand and has to be handled. Only part of it goes to the pig machines.

Mr. Mather.—But the pig machines were installed to save the cost of labour. Is this not being realised?

Mr. Alexander.—I will look into it. We find it difficult to sell machine-cast pig.

Mr. Mather.—The Indian Iron and Steel Company casts nearly all its pig by machine and manages to sell it.

Mr. Sawday.—We sell machine-cast iron whenever we can, but the Indian foundries want sand-cast and we have sold more than double the quantity the Indian Company has sold.

Mr. Mather.—You are not selling any machine cast iron?

Mr. Sawday.—We are selling when we can but the Indian foundry wants sand-cast and we have sold more than twice the quantity the Indian Company has sold.

Mr. Mather.—Messrs. Burn and Company told us of certain Indian customers who want a large proportion of machine-cast iron.

Mr. Sawday.—I think it was the East Indian Railway.

Mr. Mather.—Are you not exporting any foundry iron?

Mr. Sawday.—Yes to Japan and some to Europe.

Mr. Mather.—Will Japanese firms not take machine cast iron?

Mr. Sawday.—Yes.

President.—I don't remember whether I asked you to give us the export figures for pig iron.

Mr. Peterson.—I will let you have a statement if you wish.

President.—I suppose consignments to Europe will be very few: in that case you might give us your prices so far as Europe is concerned.

Mr. Mather.—As far as these comparisons between A and B and C and D are concerned, both in the financial year 1925-26, the yield in A and B which appears to be calculated on the yield from the ore is 63·9 per cent., and the yield on C and D is only 58·06.

Mr. Alexander.—The scrap charged in A and B has a yield of 100 per cent.

Mr. Mather.—Naturally, but it still leaves a very substantial difference in the yield of iron from the ore. I presumed previously that you used the same ore in both furnaces, but were you using ore from one mine in the one case and quite a different ore in the other?

Mr. Alexander.—We are using more high grade ore in A and B—Sulaipat and Noamundi on A and B and Gurumahisani and Badampahar on C and D. The yield of 63·9 on A and B is too high.

Mr. Mather.—If it is too high there is something wrong with the cost sheets. It is not a mistake in the calculation, which I have checked.

Mr. Alexander.—You cannot get 63·9 yield on 59 to 60 per cent. ore.

Mr. Mather.—That suggests that either the ore is not stated correctly in one of these statements or in both or that the weight of pig iron is not stated correctly.

Mr. Alexander.—It will be the ore.

Mr. Mather.—Are you satisfied that the weight of pig iron is correct?

Mr. Alexander.—Everything that goes over the pig machine is weighed. The ladles are weighed when full and after being emptied and the nett weight of metal ascertained.

Mr. Mather.—I suppose you have a regular analysis of the slag from these two furnaces. There is no possibility of some of the difference being due to iron in the slag?

Mr. Alexander.—It is checked up daily.

Mr. Mather.—I suppose that somebody is really seeing what is going on.

Mr. Alexander.—Yes.

Mr. Mather.—It is quite possible that both these figures are wrong.

Mr. Alexander.—One is too high and the other is too low.

Mr. Mather.—The iron content of the ore is about 60 to 61 per cent.

Mr. Alexander.—60 per cent.

Mr. Mather.—So that if we take these costs as a basis for our consideration it is better to take 62 per cent. yield which would be about right?

Mr. Alexander.—Yes.

President.—But you don't seem to have got it.

Mr. Alexander.—All the scrap is taken off: that is deducted. It does not go into the product.

Mr. Mather.—That is shown here in 1925-26. Another point of interest in the comparison is, that if you look at these two sheets for 1925-26, it will be seen that the total consumption of coke in C and D is lower than A and B by 125 lbs. per ton, but C and D use very little scrap. If we correct for that we find that C and D are smelting the ore on 2,640 lbs. of coke per ton of iron and A and B 2,980 lbs. It is a very big difference and it indicates that the difference between these two furnaces is a good deal greater than your cost sheets show, so that if you are making pig iron from ore and distributing scrap evenly to the furnaces, A and B furnaces use up 340 lbs. more coke than C and D, so that C and D are more economical than A and B by a much bigger amount than your cost sheets suggest.

Mr. Alexander.—Of course these cost sheets are misleading. The coke breeze that is screened out of the coke is charged to the furnaces, but actually never goes into them.

Mr. Mather.—I am pointing out to you that when the cost sheets are analysed it will be seen that the superiority of C and D over A and B is much higher than the cost sheets show.

Mr. Alexander.—There is one thing I want to tell you. *In 1925-26* we used much more dolomite in C and D than in A and B. The difference would still be greater in favour of C and D had we used the same proportion of dolomite on A and B.

Mr. Mather.—I quite realise that. The cost sheets themselves do not provide the necessary details to work it out.

Mr. Alexander.—No.

Mr. Mather.—Are you going to reline A and B in the near future?

Mr. Alexander.—A will be blown out in the next two months.

Mr. Mather.—And B?

Mr. Alexander.—A year after that.

Mr. Mather.—When these two furnaces come to the relined in their turn, are you going to reline them exactly as they are? I take it you are going to aim at making the efficiency of A and B comparable with that of C and D.

Mr. Alexander.—No.

Mr. Mather.—How far do you expect to be able to go in that direction?

Mr. Alexander.—Not very far.

Mr. Mather.—You are going to change the lining as far as it is physically possible to do?

Mr. Alexander.—Yes.

Mr. Mather.—That should give you a bigger output per furnace and should reduce the difference in coke consumption.

Mr. Alexander.—No, because when we reline C and D, they would correspondingly go higher.

Mr. Mather.—Take C and D as they stand at the present moment. The coke consumption in A and B is 2,980 lbs. per ton which will perhaps come down to almost 2,800 apart from anything else.

Mr. Alexander.—Yes, but there is another thing.

Mr. Mather.—We can take it that there will be a fairly substantial reduction in the coke consumption and costs generally on A and B when they are relined, one this year and the other perhaps next year.

Mr. Alexander.—We never had sufficient gas to heat the stoves on a furnace. The furnace is close to the boilers which gets the gas first. The pipe arrangements are such that there has always been trouble in getting enough gas. We are going to remedy it when relining.

Mr. Mather.—We may look for an increase in the efficiency of A and B in the next couple of years, although it may perhaps not come to the level of C and D as they are now. Similarly when C and D are relined, you expect to increase their efficiency still further. Do you know when you are likely to reline these?

Mr. Alexander.—In another 12 to 18 months. D furnace is 4 years old this December. C is 3 years old this January. There is no sign of bad wear yet. We may reline D next March and C a year later.

Mr. Mather.—Within the next three years at any rate the probability is that they would be all relined and when they are relined, they would probably be working on lower coke consumption and better output.

Mr. Alexander.—All the furnaces will be relined within the next 3 years.

Mr. Mather.—Now as far as any improvement in the output per furnace is concerned, can we take it that it is going to be reflected in the cost above material?

Mr. Alexander.—Not to the same extent as last year or 18 months.

Mr. Mather.—There has not been much improvement yet in the cost above materials.

Mr. Mathias.—Could you tell me generally whether the reductions in works cost in pig iron which have been adumbrated by Mr. Mather roughly correspond with the reductions in costs shown in your estimate for the next 8 years on page 26 of the Blue Book?

Mr. Alexander.—Yes.

Dr. Matthai.—With regard to the Batelle furnace, does it compare in point of efficiency with A and B group or C and D group?

Mr. Alexander.—Just the same as A and B as now redesigned and rebuilt.

Dr. Matthai.—With regard to the production of foundry and basic pig iron, I find you make very much more foundry iron on A and B.

Mr. Alexander.—Yes.

Dr. Matthai.—What is there to prevent you from producing on A and B foundry iron of about 117,000 tons that you now make on C and D.

Mr. Alexander.—We need foundry iron for the duplex plant. The silicon in the mixer must be about 1·00 per cent.

Dr. Matthai.—If you produce more basic on C and D, it would bring down the cost of steel, won't it?

Mr. Alexander.—We don't want any more basic. We only need enough basic for the open hearth and for sale.

Dr. Matthai.—As regards the supplementary statement No. 15 showing the comparison of records of production, etc., of blast furnaces at South Chicago and Gary Works of the U. S. Steel Corporation with Tata's "C"

furnace, the C furnace gives you an average of 2·97 tons per day per sq. ft. against 2·12 tons per day per sq. ft. which is the average of the American practice. C is your best, is it not?

Mr. Alexander.—C and D are the same.

Dr. Matthai.—The point I want to be clear about is how much of this difference would be accounted for by the quality of iron ore. Is the quality of iron ore that you use the same?

Mr. Alexander.—It is better.

Dr. Matthai.—So that part of the difference would be accounted for by that.

Mr. Alexander.—Part of that would be compensated by the inferior quality of the coke as compared with the coke they have.

Dr. Matthai.—That is practically neutralised.

Mr. Alexander.—They still have a slight advantage as regards flux.

Dr. Matthai.—Really the main point is on that furnace you could do at any rate just as well as in America.

Mr. Alexander.—We do better.

President.—In making our recommendations, one of the points that we will have to consider is the amount of protection that a new works may need. For that purpose we will have to try and make an estimate in some directions of their works cost assuming that they get a modern plant and they profit by your as well as other people's mistakes. If we took your most recent coke ovens and C and D furnaces and worked out the figures, would that be reasonable?

Mr. Alexander.—Yes.

President.—Your costs may be higher.

Mr. Alexander.—I think so.

President.—As far as I can understand, the difference in costs between A and B and C and D roughly speaking would be about three or four rupees.

Mr. Alexander.—That is right.

President.—That difference has already gone into the coke ovens to some extent, except that you must take the works cost of the Wilputte ovens for coke.

Mr. Alexander.—There is a difference of about Rs. 1-8-0.

President.—Here you take the average of all furnace. If you took the average of your four best furnaces the difference will be about Rs. 5.

Mr. Alexander.—Part of that difference is due to making foundry iron on A and B. It might represent a rupee difference.

President.—To attain good practice, how long will the new blast furnaces and coke ovens take? They would not be able to get the same results in the beginning as they might get after an interval. What ought to be the interval?

Mr. Alexander.—4 or 5 years from the time they are put into operation.

President.—Would they take as much as that?

Mr. Alexander.—They will have to train their labour—the same as ourselves.

President.—Supposing you have far too many men, you may be able to spare some.

Mr. Alexander.—How long has the Indian Iron and Steel Company been running?

President.—They have done 4 years. I think that they have done pretty well in that time.

Mr. Alexander.—If you want pretty well I will say in two or three years. If you want good tonnage and costs, I will say three years, but if you want the best I will say 4 to 5 years.

President.—In your own case, how long did you take to attain your best output?

Mr. Alexander.—We started in December 1922 or January 1923 but it was not until 1925 that we really made a good showing. We had a trained organisation to handle the furnaces but if we had to train new men, we would not have got the tonnage so quickly.

President.—The position appears to be this that the cost of pig iron may be taken as Rs. 5 less.

Mr. Alexander.—Yes, than our present cost, if everything else is the same.

President.—I hope that everything else won't be the same!

Mr. Alexander.—I mean the cost of material, etc.

Dr. Matthai.—When you blow out a furnace and blow in again after a period of five or six months, what time does it take to work up to the same efficiency?

Mr. Alexander.—Just a few weeks. A furnace runs for a while, say a year or two and what we call makes its lines. Where it is working best, the tonnage for the second year will be more than that for the first year. It always gets bigger in size.

Mr. Mather.—What output do you expect to get normally on one lining in C and D for instance or in A and B?

Mr. Alexander.—Take C and D. The tonnage will be 20,000 tons a month after relining, *i.e.*, 240,000 tons per year. They run four years. The total will be about 1 million tons per lining. That is for C and D if they go 4 years. But the average tonnage since they were blown in is 16,000 tons a month, *i.e.*, 192,000 tons per year and for four years it will be nearly 800,000 tons.

Mr. Mather.—We may take it normally for a period of four years that you would expect to get nearly 1 million tons on one lining?

Mr. Alexander.—Yes.

Mr. Mather.—You may get more.

Mr. Alexander.—Or we may get less.

Mr. Mather.—That depends on what you do.

The Loss of Bounty on Rails.

President.—Loss of Bounty on Rails. As regards your statement on page 14 of your representation that you lost your bounty on 40,000 tons of rails because you did not get the orders from the Palmer Group of Railways, the point arises whether you really could have supplied all the rails on your then programme. First of all, let us see what your actual orders were in 1926.

Mr. Peterson.—About 140,000 tons for the present year.

President.—If you had got that order of 40,000 tons also, your total would have come to 180,000 tons.

Mr. Peterson.—Yes.

President.—The point arises as to whether you had enough steel to roll that quantity.

Mr. Peterson.—We have steel to roll 200,000 tons of rails. That is stated in my note.

President.—Let us see whether you had the ingot steel. Your estimate for 1926-27 was 504,000 tons of ingots.

Mr. Alexander.—Yes, and 360,000 tons of finished steel.

President.—What was your production in the previous year?

Mr. Peterson.—319,957 tons (paragraph 10 of original representation).

President.—That means that the rails would have absorbed practically the whole surplus. In that case how would you carry out your programme?

Mr. Peterson.—We would have put it into rails.

President.—There is an increased estimate for tin bars and things like that?

Mr. Peterson.—We have got an excess in the estimate for sheet bars 51,000 tons.

Mr. Mather.—That you would have to keep to in any event?

Mr. Peterson.—Not necessarily; we have got to supply only about 35,000 tons.

President.—Does it mean that it would enable you to accept another order?

Mr. Peterson.—We actually told the Railway Board that we could supply 171,000 tons of rails; that is definitely stated in the note. I can give you a copy of the letter. We informed them that we could manufacture 171,000 tons of rails. The figure that I gave you was 200,000 tons. If they had agreed to take it we could have re-arranged our programme.

President.—A re-arrangement of your programme does not seem to me to be so very easy.

Mr. Peterson.—I do not see very much difficulty in that. From the merchant mill we can certainly take off another 15,000. We can cut off the production on the plate mill.

President.—You would have no objection to shutting down the plate mill?

Mr. Peterson.—Not really. On plates we make a margin of about Rs. 35 whereas on these rails we make about Rs. 60.

Mr. Mather.—So that the arguments Mr. Sawday was using about the sections would not apply?

Mr. Peterson.—It depends on the circumstances.

President.—But the Railway Board must go on their past experience. In the past it sometimes happen that you were not able to supply all the rails.

Mr. Alexander.—That was before the new rail mills came into operation.

President.—Then you cannot blame the railways.

Mr. Alexander.—I am not really blaming the railways, what I say is that they must take into account all the changing conditions. With the new rail mills we can supply.

Mr. Mather.—Take another factor. I believe you had some rails which were ordered for 1925-26 still outstanding at the beginning of the current year?

Mr. Alexander.—They were not very many, about 7,600 tons.

Mr. Mather.—You have not mentioned that anywhere as far as I can see. Another point is, that as far as I can see you have had no orders from the Bengal Nagpur Railway yet and it is certainly to be presumed that you will have some?

Mr. Sawday.—Normally they order about November; they said at first they were not going to order at all this year but we had an enquiry some time ago and told them we could deliver at the end of the year.

Mr. Peterson.—We could not make a more careful estimate than that. The Railway Board drew up an elaborate estimate of the requirements of each railway and they put it before us. I have a copy of it here showing exactly what each railway required in 1926-27 and the total came to 171,000 tons. We said we were prepared to roll the whole lot. Since then their estimate has gone up and they want more rails now. That is the reason why our estimates have gone up.

President.—I think it would be better if you could give us a statement showing that in each year such and such orders for rails were received and that your output in each year was so much. If you charge the railways with not having given you sufficient orders it is for you to show that their

past experience would have justified the railways in supposing that you would have been able to increase your output by 40,000 tons. That is the Railway Board's point.

Mr. Peterson.—We are increasing it now.

President.—I don't see the ingot steel.

Mr. Peterson.—I have just written to the Railway Board and asked them if they will guarantee to make no change in their programme if we roll another 25,000 tons of extra rails for stock. I would not make that offer if I could not do it.

Mr. Mathias.—Normally you would not do that?

Mr. Peterson.—We would do it normally because it would be a great advantage to have a stock of rails so that when several Railways work at the same time we would deliver from stock.

Mr. Mathias.—You say you would be able to increase your output of rails this year to 190,000 tons.

Mr. Peterson.—The figure that I gave you was 175,000 to 200,000 tons. They said they wanted 171,000 tons and we could quite easily roll 175,000 tons; I am now offering to roll 25,000 tons more to keep in stock.

Mr. Mathias.—Taking your normal output over a series of years, would it be economical to raise your output of rails to 200,000 tons?

Mr. Peterson.—This is the normal estimated output.

Mr. Mathias.—I see here a table in which you give an estimate for eight years starting off with 144,000 tons (page 26 of Blue Book).

Mr. Peterson.—That 144,000 was after the railways refused to place the order for 171,000 tons. I don't know if I can put up a note they gave to me confidentially. They give a statement showing their expectations for the next five years. We think the calculation is wrong because in the third year the total requirements are so low. In making out one case we put down the quantity of rails for this year we thought we would get orders for.

Mr. Mathias.—So that this amount is based on the forecast of the railway requirements?

Mr. Peterson.—It is based on a forecast of the orders which we are likely to get. We can turn out a higher quantity.

Mr. Mathias.—Can you turn it out economically?

Mr. Peterson.—The larger the orders the lower the cost and the price.

Mr. Sawday.—Next year we can keep plates down and put on an extra amount of rails.

President.—If you do that your works cost would go up. It is a far more serious thing.

Mr. Sawday.—That is true, but rails are so attractive that our principle is to go in for rails.

President.—When I suggested yesterday that it would be better for you to go in for the most remunerative products you said you could not do it because you had so many other engagements.

Mr. Sawday.—I will give you a note on the subject.

Mr. Peterson.—The difficulty was raised that the railways required the rails at the beginning of the year. I wrote back and suggested that we should roll these rails and hold them in stock, but the only thing I wanted was a guarantee from Government that they would not alter the sections of the rails so as to give us a chance at any rate of tendering for the orders, because if they altered the sections all the rails we would keep in stock would be wasted. That is the best evidence as to our capacity that I can give you.

Mr. Mather.—Have you not in almost all recent years received fairly large enquiries for rails after the beginning of the year?

Mr. Peterson.—We usually get orders for about 10,000 to 15,000 tons of extra rails during the course of the year after the train contracts are placed.

Mr. Mather.—Supposing that happened and you got orders for 15,000 tons of extra rails bringing up your orders including the outstandings to 160,000 tons?

Mr. Peterson.—We are making no complaints now. They have ordered 144,000 tons, but before the note was written the order was only for 109,000 tons. Other orders has come in since then; there have been additional orders from the Bombay, Baroda and Central India Railway, Great Indian Peninsula Railway, North Western Railway and it is possible the Bengal Nagpur Railway may now order some.

President.—I think in this statement you have given your estimate for rails as 144,000 tons.

Mr. Peterson.—Yes. We gave that as an estimate of the orders we were likely to get during the year, and working on the figures the Railway Board have given us we do not think we are likely to get more.

President.—I do not see any extra ingot steel which you can roll.

Mr. Peterson.—We might take the whole of it from the merchant mill.

President.—Yesterday both you and Mr. Sawday said that it would be a calamity if you were to do that. I suggested that it would be more economical to shut down the whole of your merchant mill and Mr. Sawday said it could not be thought of?

Mr. Peterson.—It would not be worth while doing for ordinary commercial competition, but if we could get order for 25,000 tons of rails we would think of it. This is such a very much better price than we could get for ordinary sections which cost so much more to roll.

President.—That does not alter the argument that when you find a particular outlet more economical you should produce more of it. The point is, that you have not got the extra steel.

Mr. Alexander.—We can take it off the sheet bar.

President.—If you take it off the sheet bar what you are going to do with the tin bar? The whole point of the Railway Board is that you have got as many orders as would suffice for your production.

Mr. Peterson.—With an order for 144,000 tons I am making no complaint. At the time the note was written the orders were for 109,000 tons only. I still say that we would be prepared to roll 175,000 tons of rails.

President.—On these figures that you have given I do not think I shall be prepared to hold that you had the steel to make 40,000 tons of additional rails. There is not 1 ton of ingot steel unless you are prepared to-day to do what you said yesterday would be disastrous.

Mr. Peterson.—I do not understand why you say there is no steel. I can take 16,000 tons from the sheet bars; that is 51,000 tons, and we are bound to supply only 35,000 tons.

President.—You forget that you are applying for protection for your sheets. If you did this I do not know whether you would be doing the right thing.

Mr. Peterson.—We are bound to supply 35,000 tons to the Tinplate Company and there is still 16,000 tons to spare.

Mr. Sawday.—There are 10,000 to 12,000 tons to spare on the old 28" mill.

President.—I confess I am not convinced on the point.

Mr. Peterson.—I know that the Railway Board always complain that they have had trouble in getting supplies. There was difficulty about the supply in previous years, that is true, but they can get them now. We will naturally switch our steel on to whatever pays us best.

President.—I am glad you think so, yesterday you not. Admit that this was the right thing to do. You would have more than Rs. 8 lakhs by shutting down your old mills, on your present figures. It is more than the

bounty. Obviously there is a clear saving there. If you produce more rails and shut down your old mills then you have about Rs. 20 lakhs on the works costs and you get Rs. 8 lakhs as bounty.

Mr. Peterson.—It is the rail orders that are attractive, otherwise it would not be worth while. I think the difficulty is these railways want rails in the first half of the year.

President.—You said you lost the bounty on 40,000 tons and the railways have fairly well shown that you could not have produced them.

Mr. Peterson.—I do not agree. We shall roll 175,000 tons of rails if they guarantee the section. If they don't guarantee the section, we won't do it. By the end of this year you will see 175,000 tons rolled provided they don't change their section. That should be sufficient evidence whether we can roll this quantity or not.

President.—Then as regards these offers about the Madras and Southern Mahratta and the Burma Railways the point arises whether they should be asked to pay you the same rate as the other railways. They say that unless a prohibitive tariff is put on all rails, you would not be able to sell your rails in those parts except at a lower price. That is their answer.

Mr. Peterson.—They didn't seem to have attached much importance to that when they made their seven years' contracts with us.

President.—But at that time the difference was not very great. Now they are able to get a certain class of rails from the Continent cheaper. They say further that the freight to Madras and Rangoon is very much smaller.

Mr. Peterson.—The only point I am pointing out is that they didn't seem to have considered that in the past.

Mr. Mathias.—But the freight was very much higher than it is now.

Mr. Peterson.—Probably not, for Government purposes.

Mr. Mathias.—It must have been higher.

Mr. Peterson.—Not very much higher.

President.—It is less by about 6 shillings. I am speaking from memory.

Mr. Mathias.—When were these contracts made?

Mr. Peterson.—In 1919. My point is that they didn't make any discrimination in the price of rails supplied to different railways. They didn't seem to have considered this question of freight.

President.—Seven years ago you might have thought quite differently from what you do now on many matters.

Mr. Peterson.—I am only pointing out that the two statements are not consistent.

President.—You yourself stated just now that the rails were a very remunerative section.

Mr. Peterson.—They are a very simple section to roll.

President.—If you get an order for 30,000 to 40,000 tons more rails you can bring down your works cost.

Mr. Peterson.—Undoubtedly.

President.—Would it not be better for you to quote a lower price to the Madras and Southern Mahratta Railway and the Burma Railways and bring down your cost rather than quote them a higher price and let them go?

Mr. Peterson.—We did offer them a low price.

President.—You didn't quote a low enough price.

Mr. Peterson.—We quoted pretty low.

President.—Would it not be better for you to quote them a price at which they could buy these rails and at the same time bring down your costs?

Mr. Peterson.—We quoted as low as Rs. 100 f. o. r. Tatanagar. That is the lowest quotation we have made for rails since the orders in 1913.

Mr. Mathias.—What that for Burma Railways?

Mr. Peterson.—Yes. It is very difficult to ascertain what competition we are up against in the matter of these rails. We don't know whether they are ordering from England or from the Continent. We don't know exactly what prices they are likely to get.

Mr. Mathias.—Supposing the Continent goes out altogether as regards rails, you have no difficulty in quoting.

Mr. Peterson.—Supposing we are now asked to quote for the supply of rails to the Madras and Southern Mahratta Railway, what figures are we to take as the English price. It is extremely difficult to ascertain what exact price we have got to quote. We have always said that that system of obtaining these things by tender is not really the best method.

Mr. Mathias.—What do you suggest in a case like that?

Mr. Peterson.—If you want really to support the industry, the best thing is to place the order with the industry and give it a price which would give the industry a fair profit. The Railway Board have done that. The difficulty is that we don't know what price we have to tender against. We have to make a guess. Sometimes we make a guess—a little too high or a little too low. There is a case in India where the orders for a certain class of railway material have been placed as a result of tenders at rates varying from Rs. 68 to Rs. 84. In that case there is no difference between the firms which quoted Rs. 68 and the firms which quoted Rs. 84. Firms which quoted Rs. 84 were sufficiently fortunate to get an extra Rs. 17 on the order. I don't think that that way of placing the orders really does lead to the development of the industry. In that case 4 firms got 4 different orders from the North Western Railway at Rs. 68, Rs. 74, Rs. 76 and Rs. 84—the same tender, exactly the same specification made from the same pig iron.

President.—The orders were split up.

Mr. Peterson.—Yes and they got different tenders, rates varying from Rs. 68 to Rs. 84.

Mr. Mather.—Why didn't they give the whole of the order to the lowest tenderer?

Mr. Peterson.—They didn't want to give it for some reason. I don't know what the reason was.

President.—What offer did you make?

Mr. Peterson.—The offer that we made to the Railway Board was this: We will supply you rails at the actual cost paid by English railways to the English rail makers. If somebody says please tender for 10,000 tons of rails, we don't know what his lowest quotation may be. We have to take a chance. In the past two or three years, we don't know the rate of exchange on which the calculation is made.

Dr. Matthai.—How long ago were these orders placed abroad?

Mr. Peterson.—About two months ago.

Mr. Mather.—May I ask you another question about the offer that you made to the Railway Board regarding the supply of rails at a price at which the English railways paid to the English makers. Did you simply mean that you were to receive an equivalent price paid in England?

Mr. Peterson.—Yes, *plus* freight to India. The policy of buying in the cheapest market makes it extremely difficult for us to tender. Two or three years ago we were actually asked to quote f. o. b. some British port. I mentioned that in my 1924 evidence. Very much the same position has arisen as regards steel sleepers. We do not know what price is being offered.

Steel Sleepers.

President.—As regards steel sleepers let me understand the position. First of all you thought that it was not really an offer.

Mr. Peterson.—No. I thought they merely wished to know the price at which we would supply steel sleepers in order to compare it with the price they had already got so as to decide whether to use steel, wood or cast iron.

President.—In any case you were not prepared to take the order for the whole quantity.

Mr. Peterson.—There are two points. One point is we have these contracts with the railways. This 100,000 tons would be spread over two years. I think I am right in saying the Bombay, Baroda and Central India Railway will take steel sleepers next year. None of the other railways have said anything about them. But the year after that the railways might suddenly demand the entire supply of steel sleepers under the contracts and we would find it very difficult to resist the demand.

President.—The position then is you could not really accept this offer, because there were these difficulties.

Mr. Peterson.—That is one difficulty. Another difficulty is this. As I said our rail contracts have expired. At the end of this year we are estimating for a total production of about 150,000 tons of rails. It is practically certain that the Railway Board and the railways will ask us to quote in competition with English and possibly continental rails. We shall have to take the risk of quoting on this 150,000 tons of rails without knowing what the protection is going to be. We shall have probably to quote very low in order to obtain the orders. I don't really feel that the Company can afford to take the risk of quoting ahead for next year with reference to any larger quantities of steel required by the railways.

Dr. Matthai.—I think probably you are quite right from your own point of view, but supposing you said in answer to the proposition that you got, the fair price for us would be something like this or under present conditions we cannot quote. Here you get a business proposition.....

Mr. Peterson.—It is not a business proposition.

Dr. Matthai.—Why do you say that?

Mr. Peterson.—I will prove it. In the first place no delivery is stated. In the second place the design of what was wanted is not stated.

President.—I don't see much prospect of your being able to manufacture many sleepers until your output of steel has increased a good deal.

Mr. Peterson.—If we got the orders for rails, we shouldn't want to manufacture steel sleepers. We could not make this quantity of steel sleepers without shifting the location of the plant from where it is at present.

President.—Why not admit that and say that you cannot execute the order.

Mr. Peterson.—We are prepared to do it, if it is made worth our while.

President.—Surely you must produce more steel or you must give up something of your other products. That is what it comes to.

Mr. Peterson.—This order would absorb all the surplus steel for the next two years. We could import bars and roll them.

President.—You could not claim protection in that case.

Mr. Peterson.—We should not ask for it. As a matter of fact I may point out that at present we don't get any protection.

President.—We will go more fully into the question of costs later.

Mr. Peterson.—I might add that the Bombay, Baroda and Central India Railway would give us an order at the contract price. It would probably be higher than the Government of India will be prepared to give.

Hardware Tools.

Mr. Mather.—As regards hardware tools, in your new statement showing the estimated cost on the basis of a production of 100,000 tools per month in the Agricultural Department you charge bars at Rs. 135, whereas in Enclosure No. 10 to your representation you have charged bars at Rs. 109·51 per ton. Is this being run as a department of the Tata Iron and Steel Company?

Mr. Peterson.—Yes.

Mr. Mather.—If we are to take into account the overhead charges which you propose in your original statement that we should, then the bars should be charged at works cost and not at selling price.

Mr. Peterson.—You will have to take into consideration the whole production of the Steel Works.

Mr. Mather.—For the purposes of overhead, either you include it in the total production or treat it as a separate thing.

Mr. Peterson.—On the assumption that you are going to treat it separately, that has been shewn, If you are going to treat it as part of the works, we will have to treat the output of tools as finished steel.

Mr. Mather.—We must do one or the other.

Mr. Peterson.—Yes.

President.—Rs. 135 is your present selling price of bars.

Mr. Peterson.—Yes.

President.—If we take the works cost, how much would it be?

Mr. Peterson.—Rs. 109.

Mr. Mather.—On page 38, you give the average prices to consumers for tools delivered at Calcutta and more recently on 31st July 1926, you sent us a statement showing the c. i. f. prices. These are not on the same basis. You have given your selling prices on the basis of a ton, whereas c. i. f. prices you have given per dozen or per cwt. It is almost impossible to make an accurate comparison on this information.

Mr. Sawday.—These are actual prices (handed in).

Mr. Mather.—At the bottom of page 38, you say "About 20 per cent. should be deducted from this price for commission to selling agents and other expenses." Does that include part of the cost of your sales organisation?

Mr. Sawday.—No.

Mr. Mather.—Do you think that it is likely to remain for long as high as that?

Mr. Sawday.—It is simply a method of selling. We give the dealers something like 10 per cent. The list prices are the prices to the consumers.

Mr. Mather.—It occurred to me that, in order to persuade the dealers to stock the new tools and try to push their sale, you were, in the early stages, giving a higher commission.

Mr. Sawday.—In the hardware trade, you have always to give the dealers commission. These prices are so arranged that they are 10 per cent. below the import prices. We may get rid of this 10 per cent. in time.

Mr. Mather.—Is this 20 per cent. practically the same as the commission and corresponding expenses charged on the imported articles?

Mr. Sawday.—If you take the prices to the dealers, the home manufacturer will get those prices less 5 per cent., less freight, landing, duty and so on.

Mr. Mather.—Do you know what proportion freight bears to the cost of these articles on an average?

Mr. Sawday.—The allowance made on top of the f. o. b. price for freight, landing, etc., is 17½ per cent.

Mr. Mather.—You do not know the freight?

Mr. Sawday.—No.

Mr. Mather.—Unless the freight is very high, this 20 per cent. is probably high.

Mr. Sawday.—The difference is this. The importers sell only to dealers. We have to fix the prices to consumers, because we sell direct to the railways and tea gardens. For the ordinary consumers, we make a list and arrange with the dealers that they will not sell to the consumer at more than those prices.

Mr. Mather.—The retail selling price is 10 per cent. below that of the corresponding imported article in order to persuade the dealers to push your tools?

Mr. Sawday.—Yes. We hope to be able to work off that 10 per cent.

Mr. Mather.—You would agree then that as the article comes to be better known, you will get a better proportion of the selling price.

Mr. Sawday.—We hope so.

Mr. Mathias.—Do you sell direct to the tea gardens?

Mr. Sawday.—Yes, but the agents get the same commission.

Mr. Mather.—On page 39 you have given us an estimate of the depreciation on the block value at 7 per cent., interest on working capital at 6 per cent. and return on capital at 6 per cent. Did you fix that 6 per cent. because you thought that it would be a satisfactory figure for that part of your concern?

Mr. Peterson.—On the whole we thought that 6 per cent. would be reasonable. I should like to point out one thing about the agricultural implements, and that is that the Director of Military Supplies has already asked us if we will keep in stock the tools required for mobilisation and if we will make them for the Army in times of war.

Dr. Matthai.—Do you use pulverized coal in making these?

Mr. Peterson.—Yes.

Dr. Matthai.—Is there any special advantage in that?

Mr. Peterson.—It has been partly successful and partly not. One of the difficulties in the use of pulverized coal is the high ash content.

Dr. Matthai.—It would, I suppose, increase your coal cost per ton of tools.

Mr. Peterson.—As compared with gas, it would.

Mr. Mather.—Because of the difficulty with the ash, you are paying rather a higher price for coal?

Mr. Peterson.—We have to get a special coal which is rather low in ash. Otherwise the pulverized coal plant has been quite successful, I think.

President.—My difficulty is that in the case of these implements it is very difficult to follow our orthodox method of arriving at the fair selling price. We cannot get the precise cost as we can in your case.

Mr. Peterson.—It is very difficult to arrive at a price for each article.

President.—In a case like that, it is very difficult to apply our formula.

Mr. Sawday.—It is almost impossible. Moreover the 20 per cent. only applies when there is a demand for imported tools. There is one thing I should like to point out. There is a big demand for tools in northern India but anything like 20 per cent. is hopelessly inadequate there as selling cost. We have not made any serious attempt to sell yet in northern India because it a question of money. In northern India there is an enormous use of these tools, but people never import these, they use locally made tools.

President.—Can't you use plate scrap for these?

Mr. Sawday.—Our plate scrap is all thicknesses. You have got to sort it and that means time. For large quantities it is probably impracticable.

President.—I really do not know how to deal with this application. There is at present an *ad valorem* duty of 15 per cent. and you are asking for 25 per cent., are you not?

Mr. Peterson.—I think that was what was originally recommended by the Tariff Board.

President.—What difference does it make to you, this difference between 15 and 25 per cent., on your total output?

Mr. Peterson.—Not very much, but one of our arguments is that it would not mean a bigger cost to the cultivator.

Mr. Sawday.—Small foundries in India benefit by the scrap we distribute. They are using more scrap than they did before.

President.—As things stand now your customers are mainly plantations and so on?

Mr. Sawday.—Tea gardens; railways are negligible. The bazar is the main consumer, coolies and labourers.

President.—The cooly is employed by the railways and the workshops. Is he an agricultural cooly?

Mr. Sawday.—Also agricultural of course. He must have something to dig with. Bombay and southwards is all imported material, north of that is mostly blacksmiths material.

President.—Is the bulk of your market in the Punjab and the United Provinces?

Mr. Sawday.—No. Hardly any of it is yet but it ought to became a big market.

Mr. Peterson.—I would like to mention one point regarding the question of railway materials. The North Western Railway under their old contracts used to order almost all the materials from us. With the contract ceasing there would be 8 to 10 small indents a day which usually came to us from one or two buyers. They wanted rapid delivery and so on, so it was not worth our while to quote for them. We therefore thought that it might suit us to open a depôt in Lahore. But the trouble was that the railway would not allow us railway material rates whereas if they bought from Karachi they got railway material rate and that idea was therefore knocked out. Eventually we said ' if you could give us a godown inside your yard we will stock the materials there and we could show the stuff to your people before they bought and we could quote from there. We only asked that if we wanted to supply it to the bazar we might take it out ' and pay the difference in rates, but that did not suit them. Then I said " we will put the material into your yard and supply only you; we guarantee to take nothing out for other customers, you give us railway material rate from Tatanagar and you are not under any obligation to buy unless the price is suitable. Even that was refused. The point really is that they are giving preference to the importer by allowing him railway material rate whereas we cannot get it.

Mr. Mathias.—Would you look at page 13 of the blue book where you give a table in which you estimate that by the year 1933-34 you would be able to do without protection. The selling prices you have given there are rather puzzling me because you take rails at Rs. 125 and bars also at Rs. 125; prices now have been as low as Rs. 105 for rails while bars are somewhere about Rs. 135.

Mr. Peterson.—The price of rails is a bit too low as compared to ordinary steel. Bars will be a little more than rails.

Mr. Mathias.—If we take present figures (say Rs. 135 for bars) *deduct* the protective duty of Rs. 40 and *add* revenue duty of 10 per cent., we get a figure for bars some Rs. 15 per ton less than the figure you have taken for the purpose of calculating whether in future you will be able to do without protection. The same applies to other articles though not to the same extent.

Mr. Peterson.—That is with 10 per cent. protection.

Mr. Mathias.—Rs. 10 for bars against Rs. 14 for rails.

Mr. Mather.—I have one question to ask about this proposed depôt at Lahore. You say that the railway company's refusal means that they are giving the importer a definite advantage. But your point about opening a depôt in Lahore is that you could then send them up wagon loads although the demand is for small quantities, but the importer in Karachi got railway material rates.

Mr. Sawday.—Yes, for small quantities we only get it for wagon loads.

Mr. Peterson.—That is so, for a much greater distance.

Evidence of Mr. F. C. TEMPLE, Mr. J. C. K. PETERSON, C.I.E., and Mr. S. K. SAWDAY recorded at Jamshedpur on Wednesday, the 11th August 1926.

President.—You are in charge of the town, Mr. Temple?

Mr. Temple.—Yes.

President.—What is your official designation?

Mr. Temple.—Chief Town Engineer and Administrator.

President.—What are your principal functions?

Mr. Temple.—Looking after the business of the town—letting of quarters, leasing of land, and general engineering.

Housing Arrangements.

President.—As regards housing, this is a very interesting statement—Supplementary Statement No. 27. But I don't think that we should print it with all these details. First of all, is this statement complete or is it only from the beginning of 1912?

Mr. Temple.—This is a complete statement right from the beginning.

President.—You have not given the total anywhere.

Mr. Temple.—The total number of houses we have built so far is 4,159.

President.—It would be simpler if you stated the number and rent of each class of houses.

Mr. Temple.—You want a statement showing the number of houses at particular rents.

President.—Yes, but don't put in all these details as regards accommodation and so on.

Mr. Temple.—No.

President.—How do you fix the rents?

Mr. Temple.—The present rates are approximately 5 per cent. on the capital cost, but they vary a great deal.

President.—Would they exceed 5 per cent.?

Mr. Temple.—Some exceed 5 per cent. and some are below that.

President.—Is that 5 per cent. on the initial cost?

Mr. Temple.—Yes.

Dr. Matthai.—That is without taking repairs into account.

Mr. Temple.—Yes.

Mr. Mathias.—The assessment on some of the smaller quarters would come to more than 5 per cent.

Mr. Temple.—Somewhere about 6 per cent.

Mr. Mathias.—You have got no definite system.

Mr. Temple.—We are systematising but a great many of these rents were fixed a long time ago and we have simply carried on.

Mr. Mathias.—You have no standard rent.

Mr. Temple.—There is no standard rent but it is approximately 5 per cent.

Mr. Mathias.—Are you carrying out any pooling system of rents?

Mr. Temple.—We are overhauling the whole thing.

President.—What I want is the total amount spent on these different houses, a short statement of your programme and what you intend to spend in the next two or three years—how many houses you propose to put up, how many men you would accommodate and so on. We want to get some idea as to what the accommodation is, what the rents are, what amount has been spent, what return you get and what loss you have to make good out of revenues.

Mr. Temple.—Yes.

Mr. Mathias.—Have you any definite system of rules for assessing rents at all?

Mr. Temple.—There is no definite system, but it works out approximately to 5 per cent.

Mr. Mathias.—In many provinces, the Government servants are divided into three classes, the first class paying fully economic rents, the second class something less and the third class paying still less. You have no such system.

Mr. Temple.—No.

President.—Who is this gentleman, Ramdas?

Mr. Temple.—He is the contractor who built a number of houses.

President.—These now belong to you.

Mr. Temple.—Yes, we have bought these.

President.—The rents charged are on the basis of the purchase price.

Mr. Temple.—Yes.

President.—You have not told us how much you have actually spent since 1921-22 to March 1926. The total is not put in.

Mr. Temple.—Do you want the total of Statement II?

President.—Yes. Have you got your total expenditure on the water works since 1912?

Mr. Temple.—I can get that for you.

President.—The best thing is to give it up to 1922 and then to carry on until March 1926. Statement No. 59 will have to be revised.

Mr. Temple.—Yes.

President.—In Statement No. 60 I see that the monthly paid employees have fewer houses than the weekly paid.

Mr. Temple.—The total number of quarters is 4,159.

President.—How many people do they house?

Mr. Temple.—21·3 per cent. have been allotted quarters and they are putting up other people.

President.—How many does each quarter hold?

Mr. Temple.—Five persons on an average. The balance are lodging with others to whom quarters have been allotted or are living in Jugselai or living in contractors' quarters, or private huts and houses.

President.—What it means is this that for 4,159 people provision has been made officially.

Mr. Temple.—Yes.

President.—And there are other people among your employees who live with these 4,159.

Mr. Temple.—Yes.

President.—A quarter does not represent a house?

Mr. Temple.—It may be part of a house or it may be a whole house.

President.—Are the huts and houses of the Company's employees—are these built by themselves?

Mr. Temple.—Yes, the total is 6,194.

President.—That is including the weekly paid.

Mr. Temple.—Yes.

Dr. Matthai.—May I know with regard to these whether you lease the land to them?

Mr. Temple.—Yes.

Dr. Matthai.—What are the terms of these leases roughly?

Mr. Temple.—They are annual leases, liable to be terminated on a month's notice.

Dr. Matthai.—Ultimately it comes to this that the houses are theirs located on land that belongs to you.

Mr. Temple.—Yes.

Dr. Matthai.—On an average what would be the duration of the lease in respect of the land?

Mr. Temple.—Most of them are annual leases. All the huts are on annual leases. We also lease out land on 30 years' agreement.

Dr. Matthai.—Generally they would be short leases.

Mr. Temple.—Yes.

Dr. Matthai.—Supposing a man has put up a house on land that belongs to you and leased to him on a year's lease and at the end of the year he is discharged, what happens to that house?

Mr. Temple.—He usually manages to sell it to somebody else. We help him if necessary.

President.—Do you get it valued?

Mr. Temple.—We have it valued as a rule.

President.—Do you advance money for building houses?

Mr. Temple.—Yes, we have advanced just over Rs. 1,10,000 up to date.

President.—Do you recover the advances in instalments?

Mr. Temple.—Yes, about one-third of their pay as a rule.

President.—What is the largest sum you would advance?

Mr. Temple.—Up to two-thirds of the estimated value of the building.

President.—When completed?

Mr. Temple.—Yes.

President.—I suppose you take a sort of mortgage on the house.

Mr. Temple.—Yes.

President.—Do you have any difficulty in recovering advances?

Mr. Temple.—No difficulty so far.

President.—Are these houses built out of these advances?

Mr. Temple.—Some of them, yes. Up to March 1926, 1,101 people have taken advances.

President.—It is about Rs. 100 per man on an average.

Mr. Temple.—Yes.

President.—Does it represent 1,100 houses?

Mr. Temple.—Yes.

President.—This provides accommodation for about one-third of the population.

Mr. Temple.—Yes.

President.—What about the remaining two-thirds?

Mr. Temple.—They lodge with other people. A good many of them live in Jugselai where they have got their own houses.

President.—What is the distance of that place from the works?

Mr. Temple.—1½ miles. The farthest place from which some of our workers come is about 9 miles from the works.

President.—Do they come every day from such a long distance?

Mr. Temple.—Yes.

President.—Walking 18 miles a day must involve a tremendous strain on them.

Mr. Temple.—Those are the people who choose to live in their own villages.

President.—Have you taken a census of your population?

Mr. Temple.—Not since 1921.

President.—What did you estimate the population at then?

Mr. Temple.—A little over 50,000, but that was certainly inaccurate for the returns were not complete. There was a cholera epidemic then which scared a lot of people away. It was probably 75,000 then and now I think it is nearly 100,000.

President.—That is within the official limits of Jamshedpur?

Mr. Temple.—Including Jugselai.

President.—Have you made any attempt to find out really what population you have?

Mr. Temple.—We have the census report of 1921, but we have not taken a census since then.

Mr. Mathias.—Can you tell me whether the Company carries out any system of inspection work to satisfy itself that there is no overcrowding? My point is this, that there are 30,000 employees for whom about 10,000 houses have been provided. A certain proportion also live outside the town. The figures might suggest that in some cases there is overcrowding. Is there any organization which reports from time to time as to the position in the matter of overcrowding and on which perhaps your programme of extension of new houses is based?

Mr. Temple.—We know approximately what the position is, but there is no organized system of finding it out. We know that the present houses are somewhat overcrowded and that is why an increased building programme has been laid out. If the percentage goes up to about 50 per cent. it will probably be about right.

Dr. Matthai.—With regard to these houses that you provide I find from one of the statements you have submitted that the rent charged by you is 30 to 60 per cent. below the rent charged by private landlords. Are there landlords who get more than 5 per cent. on houses?

Mr. Temple.—They get about 8 per cent. or more.

Mr. Peterson.—The standard in Calcutta for a normally good house is 6 per cent. In the districts for houses of our type the rent would approximately represent not less than 7 to 8 per cent.

Dr. Matthai.—Have you any definite plan of extension drawn up?

Mr. Temple.—We have got a programme. The whole area has been planned for the development of the town.

Dr. Matthai.—What is the depreciation on these houses?

Mr. Temple.—Big houses about 3 per cent.: cost of repairs is about 1½ per cent.

President.—Does the rent include municipal services or do you charge extra for them?

Mr. Temple.—We charge Re. 1-8-0 a month in the northern town, per tenant for scavenging.

President.—That would not apply to houses for the ordinary labour?

Mr. Temple.—No.

President.—In most of these houses there is some sort of water supply available.

Mr. Temple.—Yes. Down to a certain grade it is given inside the quarters and below that it is given in street standposts.

President.—As regards these statements, let us take statement A. Whose form is this? (Statement No. 62.)

Mr. Temple.—Government of India.

Mr. Peterson.—I do not know why they asked for it.

President.—Have you got any census of school-going children?

Mr. Peterson.—We have not got it. The last census was that in 1921-22.

Hospital Accommodation.

President.—This statement IV that you have sent in is very interesting. It appears from it that you must have a very much bigger population than the figure you have given, otherwise how do you account for 480,000 men mentioned here?

Mr. Temple.—People come to this hospital from 35 miles, perhaps more.

Mr. Peterson.—This is probably the best hospital in the province outside Patna.

President.—There must be a tremendous amount of sickness here.

Mr. Sawday.—This is the only hospital where they are anxious to go to.

President.—What does this figure of 480,000 mean?

Mr. Temple.—This is the number of visits per day, not the number of individuals. Number of individuals is the second figure.

President.—New cases 164,000, what does that mean?

Mr. Temple.—People who come in for the first time in the course of the year. That is the total number of people seen.

Mr. Mathias.—Can you give me any idea as to how many of these cases come from outside this area?

Mr. Temple.—We can get that for you.

Mr. Peterson.—You want the number of people unconnected with the works?

Mr. Mathias.—Yes. It seems to me that you are supplying medicines free to all people whether connected or unconnected with the factory.

Mr. Peterson.—As a matter of fact our hospital is now being used as a common police hospital; they send cases here from long distances.

Mr. Mathias.—My point is this, you supply medicines free; then if they are supplied to all people who come from outside this area, it seems to me that the company is undertaking something for people for whom they have no responsibility?

Mr. Peterson.—If the Board is really interested I can put in all the statistics of expenditure on the hospital.

President.—Is the Government of Bihar and Orissa making any contribution?

Mr. Peterson.—No. They made a small contribution. We have asked the Government of Bihar and Orissa to take over this hospital.

President.—It is common to other works too. A man comes from a long distance and says he is suffering from disease. He may be an actual employee or friend or dependant of one; you cannot very well give the doctor discretion to refuse to treat him; it would not do at all in a country like India.

Mr. Peterson.—The actual expenditure on medicines does not really amount to very much. If we restricted ourselves to our employés only that would not mean very much less expenditure. I shall give you the actual expenditure on medicines for the year. There are at least five or six cases of serious assault which are sent in by the police regularly which have nothing to do with the works at all.

President.—How many beds are there?

Mr. Temple.—Seventy-two.

Mr. Mathias.—As regards this question of favourable rents, I was going through the statement and see that in several cases the actual capital cost of various houses is practically the same and obviously accommodation is about the same too, but the rent varies in some cases; either a similar rent is charged for two houses one of which is much bigger than the other or the other way round; that is to say, different rent is charged for houses with practically the same capital cost. Is there any standard? Does the company consider that it is necessary to provide certain classes of servants, with houses, and as there is no single type available for the same class of servant, a uniform rate irrespective of the type of house is charged? Is there anything of that kind?

Mr. Temple.—An average of 5 per cent. right through, but some of them were built long ago when the cost was cheaper. These have been pushed up a bit and those whose cost has been high have been kept down a bit.

Excise Licences.

President.—Now about these country liquor shops, do you mean to say that all liquor is sold in bottles and that no one is allowed to drink on the premises?

Mr. Temple.—No.

President.—There is no place where they are allowed to drink?

Mr. Temple.—No.

President.—That is rather unusual.

Mr. Temple.—A man would buy a bottle and just leave it in a nullah outside and come back and buy more.

Mr. Mathias.—These licences are being purchased; is the auction system in force in this province? Does the company bid at the auctions?

Mr. Temple.—Yes, we do.

Dr. Matthai.—I find from one of your statements that last year you paid in the way of country liquor duty and licence fee a sum of Rs. 3 lakhs and you were running the shops? What was your gross receipt during the year?

Mr. Temple.—The actual receipts were Rs. 3,75,000 and in 1924-25 Rs. 2,54,000.

Mr. Mathias.—Is the shopkeeper an agent of yours? Has he any financial interest in the shops?

Mr. Sawday.—Yes, a very reliable shopkeeper from Cuttack.

Mr. Mathias.—Does he take any of the profits made on the shop?

Mr. Temple.—Yes.

Mr. Mathias.—The Tata Iron and Steel Company has no financial interest in it at all.

Mr. Temple.—We take Rs. 300 per month.

Mr. Mathias.—You have some sort of definite arrangement by which the profit is divided between you and your agent.

Mr. Temple.—No. We take a fixed payment.

Dr. Matthai.—How many gallons did you distribute last year?

Mr. Temple.—I don't remember.

President.—Does not the Government fix the prices?

Mr. Temple.—Yes. It is impossible to sell at a profit.

Dr. Matthai.—What is the nearest distance to another shop?

Mr. Sawday.—5 miles away.

Markets.

President.—As regards these markets do you have an inspection staff for all perishable food?

Mr. Temple.—Yes.

President.—Are there any rules made by you? What do you do for any infringement of them?

Mr. Temple.—Rotten food is prohibited from being sold.

President.—That is under your own law.

Mr. Temple.—Yes.

President.—That is one of the most difficult problems.

Mr. Temple.—There was a very large consignment of tallow oil which came last year, which was being sold as ghee. The bulk of it was railed back to Calcutta under persuasion.

Mr. Mathias.—May I ask what arrangements you have as regards the ganja or opium shops?

Mr. Temple.—We have got opium shops which have been licensed.

Mr. Mathias.—The Company does not make itself in any way responsible for these.

Mr. Temple.—No.

Mr. Mathias.—For the location of these shops, the Government is entirely responsible. The Company has no responsibility at all.

Mr. Temple.—We lease the land.

Mr. Mathias.—Do you lease the land to the Government or to the contractor?

Mr. Temple.—To the contractor.

Mr. Mathias.—But the site has to be approved by Government.

Mr. Temple.—Yes.

Mr. Mathias.—So that in a way it would be possible for you to banish these shops to less conspicuous quarters of the town.

Mr. Temple.—Yes.

Mr. Mathias.—Has the Company considered that?

Mr. Temple.—We have pushed them out a good deal. The opium shop is in a conspicuous building, not in a conspicuous part of the town.

Dr. Matthai.—On this question of leases the bulk of your leases are for a year.

Mr. Temple.—Yes.

Dr. Matthai.—Could you terminate the lease under any conditions?

Mr. Temple.—Yes, if we require the land for anything, or if the tenant is unsatisfactory and doesn't pay his rent or gives trouble.

Dr. Matthai.—Could you give me some idea as to how the clauses with regard to the termination of the lease are worded?

Mr. Temple.—I cannot remember it now.

Dr. Matthai.—I should like to have a copy of your lease.

Mr. Temple.—I shall send you.

Co-operative Societies.

Dr. Matthai.—I gather from your statements that you have got 20 Co-operative Societies. Are they all registered under the Co-operative Act?

Mr. Temple.—Yes.

Dr. Matthai.—Does the Company give any financial assistance?

Mr. Temple.—It has done so.

Dr. Matthai.—In what way.

Mr. Temple.—It has given financial assistance to start with, and also collects monthly instalments without charge.

Dr. Matthai.—You have never attempted to start Co-operative Stores.

Mr. Temple.—Yes, we had one, but it has just gone out of business. It has been bought by a merchant.

Dr. Matthai.—In these markets which you regulate are sales allowed on credit?

Mr. Temple.—Yes.

Dr. Matthai.—How long?

Mr. Temple.—It is not limited.

Dr. Matthai.—It is paid I suppose at the end of the week when wages are paid.

Mr. Temple.—To some of the shops in the market payments are made after 6 or 8 months.

Dr. Matthai.—Normally when a man buys in the course of the week he receives credit against his salary.

Mr. Temple.—That is what they do mostly. The vegetable vendors and people like that are paid cash on the spot.

Rails for Madras and Southern Mahratta and the Burma Railways.

President.—Yesterday or the day before we are talking about rails. We were discussing the question of fixing the price of rails. I should like you to give me an estimate of the difference in the price at which you may have to sell to the Madras and the Burma Railways, and Railways other than these. Supposing we fixed the price at Rs. 130 for the latter, what would be a reasonable allowance to make in order to make it economic from the point of view of the former to buy the rails from you.

Mr. Peterson.—On an average it would be a question of the difference in freight.

President.—Suppose the c.i.f. price Calcutta is Rs. 130, and the c.i.f. price Madras is Rs. 125, the Madras Railway would expect to get your rails five rupees cheaper, assuming that the rail freight was the same.

Mr. Peterson.—That is what we did. We quoted Rs. 5 less.

President.—That was not good enough, perhaps, from their point of view.

Mr. Peterson.—I was considering the comparison of other tenders.

President.—Leave alone the comparison of other tenders.

Mr. Peterson.—You ask me what allowance should be made.

President.—What I mean is what allowance might they reasonably expect?

Mr. Peterson.—About Rs. 10 in the case of Rangoon and Rs. 6 or Rs. 7 in the case of the Madras and Southern Mahratta Railway.

President.—The Madras and Southern Mahratta Railway have got more than one port.

Mr. Peterson.—They land some of the rails in Marmagoa.

President.—For that reason may they expect more allowances?

Mr. Peterson.—I should think half the freight would be fair. Bombay, Baroda and Central India are not situated any nearer than the Madras and Southern Mahratta Railway.

President.—Assuming that their demand. . . . . .

Mr. Peterson.—I don't know what the actual railway material freight is. I don't know what the actual cost of conveyance is. The railways are carrying rails for their own purposes. They ought to charge the actual cost. I have no idea of what it is.

President.—This point is rather of some importance. If you compel the railways to buy, one railway should not be put at a greater disadvantage than another. It may be possible for you to meet them to some extent by taking the order and bringing down your general works cost than letting the order go. If you get an order for 40,000 tons of more rails, it may be worth your while to reduce your price.

Mr. Peterson.—In normal times it would be. When we made those quotations they were abnormal times. Here we were quoting an exceptionally low price. The price had certainly dropped very much in two or three months.

President.—Leave that out of account for the moment.

Mr. Peterson.—Normally we would agree that the Railways in South India and the Burma Railways should get a concession in price for that reason, but on the last occasion when they made these arrangements, I believe they appeared to be content with the general quotation f.o.r. Tatanagar for all of them. They didn't ask us to consider this point.

President.—Including the Burma Railways?

Mr. Peterson.—All the big railways took rails at the same price as the Bengal and North-Western Railway.

President.—As it happened part of the time they were getting rails from you at lower prices than the imported rails. It is only now that it has become necessary for them to consider that point.

Mr. Peterson.—When they made their contract with us last time, this question didn't enter into their consideration at all. What I would suggest is that they should take at one price for all the railways and then arrange between themselves.

President.—Why should it be so? Let me put it this way. What have to consider is how much reduction you ought really to make, without losing anything, by getting the extra orders.

Mr. Peterson.—Generally speaking I should say half the freight.

Mr. Mathias.—Why half the freight?

Mr. Peterson.—I mean half the disadvantage in freight. I think it is to the advantage of the railways to encourage the manufacture of rails in this country.

Mr. Mathias.—Does it cost Rs. 16 to send your rails to Burma approximately?

Mr. Peterson.—I should suggest that they should take half and we take half.

Mr. Mathias.—Why should the Railways bear half the freight? If you cannot reduce your price by the whole freight the imported English rail will be able to compete with you.

Mr. Peterson.—Of course it would. I have worked out the freight to all the various railways.

President.—The whole question seems to me to be a very small one. If you were to get the whole of the orders for rails, supposing even you were to make good out of your pocket Rs. 3 or Rs. 4 a ton. . . . . .

Mr. Peterson.—We should have to give a concession to the railways which are situated farther away.

President.—That would ensure your sale for the whole of your rail output and it would ensure you against the risk of losing the order altogether by having to tender.

Mr. Peterson.—We could have no objection to that.

President.—But when you say that they must take half the freight then again the same difficulty arises.

Mr. Peterson.—The difference of Rs. 16 is a pretty large figure.

President.—As regards Rs. 16, I suppose that your expert will advise you what difference it would make in your works cost.

Mr. Mather.—You would have to distribute that over the whole tonnage.

Mr. Peterson.—Sooner or later, the point would arise " Is it worth while doing it "?

President.—I think that it would be much better for you to get the figures worked out

Mr. Peterson.—I have it worked out here. The point I have never been able to understand is this. Part of the line is further away from the works and part of it is nearer the works. . . . .

President.—That argument does not apply to Burma.

Mr. Peterson.—No, but it does apply to the Madras and Southern Mahratta Railway. They won't consider the possibility that they would require rails in Waltair.

Mr. Mather.—They have done that for this year's orders.

President.—When the Vizagapatam harbour scheme is completed they may take them as far as that place.

Mr. Peterson.—As I say, we might get a concession from the Railways. Rails should be carried only at actual cost.

Dr. Matthai.—Who is going to measure?

Mr. Peterson.—Do you mean the cost of conveying goods? It is published every year.

Mr. Mather.—Do you mean that Government should decide what the cost is?

Mr. Peterson.—Yes. In the Railway Board's report is given the total average ton mile cost of conveying goods. They might give us that. I am quite aware that it is not a commercial proposition. I think that it is up to the Railways to give us a chance to compete.

President.—I was considering this point with particular reference to fixing a price.

Mr. Peterson.—We shall obviously have to give a concession on that fixed price.

President.—You are not prepared to go farther than half the freight.

Mr. Peterson.—Do you want me to say definitely that it would be worth while giving up the whole freight?

President.—For that reason what I should like to know is this. Your expert may be able to tell you—supposing there is an output of 100,000 tons . . . . .

Mr. Peterson.—We might take it that we would get normally orders for 150,000 tons a year and that the additional orders would be another 50,000 tons. What you really want to know is the difference in the works cost between taking an order for 150,000 tons and taking an order for 200,000 tons. I shall ask Mr. Alexander to work that out for you.

President.—There may be small adjustments to make.

Mr. Peterson.—In addition to that, we will be quite prepared to make an additional concession in order to obtain the orders.

President.—When I examined you last time, you said that if you had to do that, you would expect something more in other departments. I pointed to you that if you were to insure yourself against risks it might be worth your while to give up two or three rupees a ton all round.

Mr. Peterson.—That was the proposal actually made to the Government of India.

President.—I am not concerned with the proposal made to the Government of India.

Mr. Peterson.—I shall make it now. If there is one average price . . . . .

President.—That is not the question. If the price is to be fixed I think that it may be necessary to consider whether you would not fix one price for a certain group of railways and another price for a different group of railways. The difference you must not expect to put upon the consumers of any other steel.

Mr. Peterson.—As far as that is concerned, I should be perfectly satisfied from the company's point of view. If they give the actual cost of taking the rails—whatever the cost may be—to the place where the rails are wanted, we would not ask for more than that.

Dr. Matthai.—The cost won't be lower than it is now.

Mr. Peterson.—I am not sure.

President.—It seems to me that the difference is not very big and it might pay you to get the extra order.

Mr. Peterson.—It would not amount to very much.

President.—I think that it might be a very satisfactory solution of the problem.

Mr. Peterson.—We would not object to a system of that kind being applied.

President.—There is this other difficulty. Supposing we fix the duty so high as to enable you to get your price and you refuse to take an order, they might be placed in very difficult position. It might mean that they had to pay the duty unless the Government of India remitted it or allowed a refund.

Mr. Peterson.—It is extremely difficult to answer that question until I know what the price of rails is going to be.

President.—If such an arrangement were made, it would be a price which, having regard to the whole total production, would be reasonably remunerative to you. What you have got to consider is, supposing you lose on an average Rs. 4 a ton, whether you would not be able to make that good by having a larger output.

Mr. Peterson.—I shall answer that question on Friday.

Compulsory Depreciation.

President.—Before going into some of the supplementary statements I think that we should dispose of the points raised in Shillong. One of the points was the question of compulsory depreciation.

Mr. Peterson.—I put that point before the Board of Directors and they have authorised me to say that they have no objection to that; rather they are inclined to welcome that.

Anti-dumping Duties.

President.—What about the anti-dumping duty?

Mr. Peterson.—We don't think that there would be any particular difficulty to the Customs authorities or to ourselves in the proposal of an off-setting duty. We think that it would be much simpler to take the port of despatch as the source of origin.

President.—What sort of off-setting duty are you having in mind?

Mr. Peterson.—The basic duty should be against British steel on a stabilised exchange and the off-setting duty should be placed on other countries with depreciated currencies.

Dr. Matthai.—You are talking now of an off-setting duty against countries with depreciating exchanges.

Mr. Peterson.—Yes. We don't think that there would be any difficulty.

President.—The depreciated exchange principle may not be applicable to Germany. Germany has protested against the action recently taken by the United States.

Mr. Peterson.—We should not regard that as affecting our proposal. I don't think that there would be any development of that kind.

Dr. Matthai.—How will your off-setting duty operate? Take a country like France. Supposing you feel that the circumstances justify the imposition of an off-setting duty against France when the franc has depreciated, would you set your law in motion on the basis of published exchange quotations or would you go entirely by prices to the extent that the depreciated exchange has been reflected in prices

Mr. Peterson.—I should go entirely on prices, at which steel is entering the country.

Dr. Matthai.—In your original memorandum you said that if the exchange depreciated by more than a certain percentage with reference to the gold par, then your off-setting duty would automatically operate. I want to know precisely what your view is.

Mr. Peterson.—You can do it either way. I think that the actual prices would be a safer way of doing it because it is impossible to say how far the fluctuations in the exchange affect prices. Recently the prices have not been affected.

Dr. Matthai.—Let me give a case. Take Germany. In Germany there are great improvements taking place in methods of organisation and distribution. Let us assume that if German currency depreciates again, it does not affect prices, *e.g.*, in the case of the franc during the past few months depreciation has not affected export prices.

Mr. Peterson.—It must have affected all prices.

Dr. Matthai.—Supposing the German exchange has depreciated again but has had no effect on prices, and assuming at the same time that as a result of the great improvements that have been going on they have been able to reduce costs, who can differentiate one from the other?

Mr. Peterson.—I don't think you can. From the point of view of India I think that the safest thing is to take the prices as the basis.

Dr. Matthai.—Supposing additional protection is given merely on account of a fall in prices irrespective of exchange, we will be protecting you for your inefficiency. Take a country like France. Depreciation gives advantage up to a particular point. Beyond that point, the exporters are not going to have any advantage. The prices begin to adjust themselves.

Mr. Peterson.—It would be very difficult to determine which it was.

Dr. Matthai.—So that if you went entirely on prices, you would be up against that difficulty.

Mr. Peterson.—The basis would be the sterling prices. Any improvement in practice or reduction in costs would be reflected in the prices in the currency of the country itself.

President.—That would be reflected in the sterling prices.

Mr. Peterson.—Yes. The kind of protection against the depreciated exchange we have suggested is this. Supposing the quotation of French steel is 400 francs, as that currency depreciates, the quotation will become less and less in sterling. But if as you say the practice has very much improved it will be seen in the country itself. That is not what has happened. Their prices have remained steady and possibly have gone up, whereas the sterling prices are coming down.

Dr. Matthai.—If you want a system of off-setting duties operating automatically, this would be a rather difficult element in it which you cannot ignore.

Mr. Peterson.—That is quite true.

President.—An enquiry into prices may be all that is necessary.

Mr. Peterson.—What we contemplate is an enquiry into the prices by a competent authority.

President.—By some executive authority.

Mr. Peterson.—Yes.

President.—The same thing as we have got in the Steel Industry (Protection) Act.

Mr. Peterson.—Yes.

President.—Would you limit it to countries with depreciated exchanges?

Mr. Peterson.—The question is whether this country can compete with a foreign country. It does not matter what the cause of the low price is. So long as the price is low, protection must be applied.

President.—In substance it comes to this. If you have a scheme of protection, its aim must be to give the local industry a fair selling price. Whatever interferes with that scheme must be guarded against. It does not matter what the cause is. Is that your feeling?

Mr. Peterson.—Yes.

President.—Are there any other general points?

Mr. Peterson.—I don't remember any.

Mr. Peterson.—While we are on this question of rails would you like me to put in the letter that I wrote to the Government of India regarding rolling for stock? I made a proposal that we should roll 25,000 tons of rails extra and put it in stock.

Finance.

President.—I don't think we want to go into any details. Then as regards the question of finance, I want to know what the position is between you and Government. Have the Government accepted your proposal?

Mr. Peterson.—Yes.

President.—Have you received a reply?

Mr. Peterson.—We have, since I gave you the copy of our letter. The Government of India told me that they would merely acknowledge the letter and we could take that as acceptance. The only thing they insist upon is that their loan must be repaid before any dividend is paid.

President.—Have you not paid off the loan?

Mr. Peterson.—We have paid off Rs. 30 lakhs.

President.—We would like you to put in a copy of the reply sent by the Government of India.

Mr. Peterson.—We will do that.

President.—Is there any question of re-constructing the capital?

Mr. Peterson.—They told me so.

President.—Your point is that so long as your assets exceed your authorized capital . . . .

Mr. Peterson.—The actual distribution of any profits between the shareholders is not actually a concern of the Government.

President.—Your capital is provided rather in a peculiar way. You have got your authorized capital and subscribed capital of Rs. 10½ crores, but then you have got debentures which also form part of your capital. If you include them do your assets exceed the amount of your total capital?

Mr. Peterson.—They exceed the capital and the debenture.

President.—On our last valuation we allowed Rs. 15 crores for the plant and 2½ crores for the collieries.

Mr. Peterson.—I am simply going on the balance sheet. That leaves assets that exceed the capital and the debentures.

Mr. Mather.—Have you actually accumulated money in a depreciation fund since 1923?

Mr. Peterson.—We write off depreciation every year. I will have a balance sheet prepared for the last year and have it put in.

President.—I think it would be useful if you gave us a brief summary of what has actually taken place and the present position between you and the Government of India.

Mr. Mathias.—What was the actual profit last year?

Mr. Peterson.—We have taken Rs. 97 lakhs as profit. Out of that has to come depreciation, dividend and everything else.

President.—And the interest on debentures?

Mr. Peterson.—That has already been paid. It is very much the figure I have given there; it is a little less. That is because we provided Rs. 7½ lakhs for possible loss on the tinplate.

President.—This question may not arise immediately, but I do really think that the way the capital has been financed involves some risk in this sense that it includes Rs. 6 crores of debentures.

Mr. Peterson.—These are not all issued. There is a considerable margin on these debentures. We have borrowed against them and there is a very big margin outstanding as security against loans.

President.—Your actual issue was two millions, was it not?

Mr. Peterson.—Here are the actual figures—

	Rs.
Issue of debenture	3,34,13,875
Loans taken against them	2,65,86,125

President.—I hope some day you will be able to redeem the mortgage on the debentures.

Mr. Peterson.—We probably will not issue any further debentures. We shall start a sinking fund for the repayment of loans. We will probably pay them up in about 30 years.

President.—But there is this question which does not arise now but may arise hereafter, supposing your assets diminished in value and you had no margin to borrow any more?

Mr. Peterson.—We have enough margin. I can prove that to the satisfaction of the Board. We have assets as against outstandings. There is a considerable margin that is unpledged. For instance we have stocks worth two crores pledged with the Imperial Bank of India and we have against that to-day about Rs. 37 or 38 lakhs.

President.—If your assets are at least equal to your liabilities then that is all right.

Mr. Peterson.—The real point is the earning power of the plant. If the plant earns sufficiently to create certain reserves then the debentures are only a way of financing it.

Collieries.

President.—Supplementary statement 8 shows the capital expenditure on Jamadoba colliery?

Mr. Peterson.—Yes.

President.—What is the total money invested in your collieries?

Mr. Peterson.—Rs. 2,13,97,000.

President.—If you have not written down the value of your colliery plant, it is time you did it.

Mr. Peterson.—That is included in the general depreciation of the company. It will be included in this figure of Rs. 4,87,00,000. We keep only one figure for the whole plant from the beginning.

President.—What is the written down value of this colliery?

Mr. Peterson.—There will be certain depreciation on the machinery but the colliery itself is a wasting asset. It is very difficult to say what the value of that will be at any given time. We can give you an estimate of the total amount of coal there is and the coal that has been worked up to date and how much remains.

President.—If we applied to this colliery the same principle that we applied to your steel plant and wrote down 40 per cent., the value would be reduced to Rs. 60 lakhs, in round figures, and your selling price including profits would come to Rs. 6-10-0 f.o.r. colliery. Is that correct?

Mr. Peterson.—Yes.

President.—Not including profits it would come to about Rs. 5-2-0.

Mr. Peterson.—That figure would be about right.

President.—That is about the present day figure. The raising cost is said to be about that figure including a small profit I suppose. There may not be such objection to including this in your block as before. But we cannot split up the collieries and say one colliery should go into the block account and the others should be excluded. Would it be possible at any time to separate those collieries which you require for your works from those which you do not?

Mr. Peterson.—We may not require one of them but we would require all the others for our works.

President.—May we take Jamadoba as the best colliery?

Mr. Peterson.—Yes. It is coking coal and there is a certain amount of steam coal too. The real point here is that we can so increase the output from Jamadoba that we may not need to use other collieries at all.

President.—Would you have to increase your plant?

Mr. Peterson.—No. We can get a larger output from Jamadoba whenever we want to with the present plant which would reduce our raising costs. The maximum possible output at Jamadoba will be 60,000 tons a month. You would not get more.

Mr. Mather.—Is this output of 337,000 tons net saleable coal after deducting the coal consumed in the colliery?

Mr. Peterson.—Yes.

Mr. Mather.—And the raising cost is also after deducting the coal consumption?

Mr. Peterson.—Yes.

President.—In that raising cost do you include depreciation?

Mr. Peterson.—No, we add that subsequently.

President.—That raising cost includes all the expenditure and the coal used at the colliery.

Mr. Peterson.—Yes, maintenance and everything. After we get the costs, we add depreciation charges and profit charges what we think that the colliery ought to make in the way of profit.

President.—You don't charge that to the works.

Mr. Peterson.—No.

Mr. Mather.—You told us just now that the raising cost during the last cold weather was a good deal less.

Mr. Peterson.—It came down to Rs. 3-8.

Mr. Mather.—It would not be unreasonable to assume that if you were getting a larger output, your raising cost might fall below Rs. 3-8.

Mr. Peterson.—No, it would not be unreasonable.

President.—I think it might be still advisable to leave out the collieries altogether.

Mr. Peterson.—I think it would be very difficult to include them, because 75 per cent. are really reserves which we use in times of need.

Mr. Mathias.—Won't that make some difference to the depreciation which the Company should be compelled to set apart?

Mr. Peterson.—It would make a difference. In the First Report they were excluded. They were treated separately.

Mr. Mathias.—If we put 6¼ per cent. . . .

Mr. Peterson.—It would mean that the depreciation might be too small. You might make an extra allowance on account of the colliery machinery. The colliery is, I say, a wasting asset. You might put a sinking fund.

Mr. Mathias.—Would it not be rather difficult to frame any legislation as has been suggested in order to compel them to lay aside money for depreciation?

Mr. Peterson.—I think it might be possible to get a declaration from them to alter the articles so that it became a necessity.

President.—If it takes the form of legislation it should be made obligatory to lay aside depreciation subject to such rules as the Governor-General in Council may make. We must leave it at that.

Mr. Peterson.—There should be some authority who should be authorised to inspect the Company's books to see whether sufficient depreciation has been set aside.

President.—Government can hardly undertake to administer the depreciation fund, but it can control its administration.

Mr. Peterson.—It would be quite easy to arrange for the fund to be administered in the proper way.

Rail and Steel Sleeper Contracts.

President.—In statement No. 17 you have given us a copy of the Bengal Nagpur Railway Sleeper Contract.

Mr. Peterson.—Yes.

President.—What about the other railways then?

Mr. Peterson.—On page 9 a copy of the contract with the other railways is given.

Dr. Matthai.—There is a slight difference in the rate between the two contracts.

Mr. Peterson.—Yes.

President.—It doesn't say very much about the duration of the contract.

Mr. Peterson.—It is for six years from the date of first delivery. That is one of the difficulties of the contracts during the war period.

President.—The period of six years in regard to these three kinds of materials usually commences from the date of first delivery. First of all let me understand the price to be paid by the Bengal Nagpur Railway. Is it Rs. 8-12-0?

Mr. Peterson.—Yes. May I say that their contract is practically cancelled. They don't want the type of sleepers which is specified in the contract. They have their own type of sleepers invented by one of their Engineers. They don't propose to make any demand upon us and we don't propose to supply.

Dr. Matthai.—How many sleepers of the sort that you make would make a ton?

Mr. Peterson.—About 14 sleepers.

Mr. Mathias.—Do they import from England?

Mr. Peterson.—Yes.

President.—As regards the other railways?

Mr. Peterson.—I think the only railway that may ask us to supply is the Bombay, Baroda and Central India Railway to whom we have already supplied.

Mr. Mather.—Your six year period has begun in their case.

Mr. Peterson.—It may be said to have begun from 1924 when we supplied a few hundred tons.

President.—The price comes to about Rs. 125 a ton?

Mr. Peterson.—Yes.

President.—It doesn't say what sort of sleepers you ought to supply.

Mr. Peterson.—The pattern has to be approved by the Agent of the Railway Company.

President.—They may want 5 sleepers of one type, 10 of another type and 15 of another type according to this, is that not so?

Mr. Peterson.—I take it that they will interpret it in a reasonable way. In any case under the law they would be required to select one.

President.—With regard to delivery you say: "During the period of this contract the "Railway Company" will inform the "Steel Company" by notice in writing at least three months before the commencement of each official year, the quantities of rails and other steel materials contracted for under this agreement that will be required during the said year, and the "Steel Company" shall declare within 30 days after receipt of such notice, the quantities of each class of these materials that they will be able to manufacture and supply to the "Railway Company" during that particular year." You said yesterday that this arrangement didn't suit you.

Mr. Peterson.—The longer they placed their orders ahead, the better for us.

President.—They give you three months notice.

Mr. Peterson.—We are contracting. We cannot ask for more than a period of three months. If it is going to become a question of legal rights, we could only ask for three months and not more.

President.—These contracts have now expired.

Mr. Peterson.—Yes, except the contract for sleepers.

President.—What is your position with regard to rails?

Mr. Peterson.—Last year we approached the Government of India in September. At that time we had a contract with the Railway Board for all the State Railways and therefore we got the usual notice under the contract, but with regard to outside railways, we didn't get really any information till as late as March.

President.—When was the delivery to commence?

Mr. Peterson.—As soon as we can give it.

President.—Before the end of the financial year?

Mr. Peterson.—Yes. The Bombay, Baroda and Central India's order was placed in April.

President.—For supply during that particular financial year?

Mr. Peterson.—Yes.

President.—What do you suggest is the best arrangement for placing orders for rails by the railways from your point of view?

Mr. Peterson.—I think 3 months' notice will be sufficient notice unless they are all going to want a very large quantity of rails in any given month.

President.—If you were to supply all the railways, it may be necessary for you to supply them in instalments.

Mr. Peterson.—We would supply them monthly. We would hold stocks in that case. 3 months' notice would be enough, provided as I say they don't want a very large supply in any particular month.

President.—Supposing they want 200,000 tons, will you have much in stock?

Mr. Peterson.—We propose to stock 20,000 to 25,000 tons next year, if they give us an assurance that they won't change the pattern.

President.—Have they been changing it very often?

Mr. Peterson.—No. Only recently they have changed the type.

Mr. Sawday.—The main trouble is the drilling.

President.—In that case you will have to stock your rails undrilled. Would that be difficult?

Mr. Peterson.—No, but the main point is that they should not change the section.

President.—Are not you thinking of difficulties that may not after all arise?

Mr. Peterson.—They do sometimes arise. What I was really thinking of is the Peninsular Locomotive Company.

President.—How many steel sleepers would you require per mile of rails?

Mr. Peterson.—About 130.

President.—As regards the freight on steel sleepers and on wooden sleepers, has anybody ever tried to ascertain the exact difference per ton mile? The wooden sleepers would be very much lighter, but they would take more space.

Mr. Peterson.—We get the same number in a wagon.

President.—It has been said that the steel sleepers lasted twice as long as the wooden sleepers.

Mr. Peterson.—I have heard that disputed.

President.—For that purpose the only important thing is to ascertain the difference in the actual freight.

Mr. Peterson.—Yes.

President.—I suppose they would charge more for a thing if it takes more space.

Mr. Sawday.—Yes.

Mr. Peterson.—They just get the same number of sleepers in a wagon as wooden sleepers. I don't think there would be very much difference.

President.—They would require more wooden sleepers, if the spacing was not the same.

Mr. Peterson.—I think so.

Mr. Sawday.—It depends on the kind of rails.

Dr. Matthai.—Are any of the other railways using steel sleepers?

Mr. Sawday.—The two railways that have shown any anxiety are the Bombay, Baroda and Central India and North Western Railway.

Dr. Matthai.—Are they using the type you are making?

Mr. Peterson.—Yes, the Bombay, Baroda and Central India is using it.

Dr. Matthai.—What is the position? If a railway is using the kind of sleepers that you are making, could they demand the fulfilment of the contract?

Mr. Peterson.—I think myself these contracts may be time barred. I am very doubtful now whether they could make any demand on us.

Dr. Matthai.—On present prices what is the position?

Mr. Peterson.—After all these contracts were made simultaneously with the rail contracts. They could have been enforced any time in the past seven years. These contracts are probably time barred.

Dr. Matthai.—Assuming they are not time barred, am I right in thinking that it is worth while for them to demand sleepers from you?

Mr. Peterson.—The real trouble of the matter is that they don't want to buy sleepers from us. They can buy sleepers cheaper from the Continent.

Dr. Matthai.—On present prices it is neither worth your while to make them nor worth their while to buy from you.

Mr. Peterson.—Yes.

President.—Supposing this sleeper combine gets going and the price rises to £8-7-6 which means roughly Rs. 145 here, it may be to their interest to ask you to supply.

Mr. Peterson.—Yes.

President.—Then what would you do?

Mr. Mathias.—You cannot buy elsewhere and supply.

Mr. Peterson.—No, they must be of our own manufacture.

Supplementary Statement No. 20.

President.—As regards this statement showing the average prices realised for the period 1925-26, it practically includes all your production. But I don't understand this 'new contract' and 'old contract'. Have they operated in the same year?

Mr. Peterson.—The old contracts are the contracts already in existence. For instance the rail contract will be with the Railway Board and the Palmer Group. The fishplates will be for the same thing.'

President.—Does the old contract refer to the 7 years' contract then?

Mr. Peterson.—Yes.

President.—As regards the new contract; is it a yearly contract or what?

Mr. Peterson.—The heading is wrong. It is not a contract. These are new prices and not long term contracts.

President.—Are these bars, structurals and other things for the Railway Board?

Mr. Peterson.—Yes. Under the old arrangement, when they revised their prices, we gave them a special rate. That arrangement has been done away with.

President.—That is why you are getting a much higher price from the Railway Board.

Mr. Peterson.—They always contract for the British standard material. They fix the prices themselves each quarter after deducting the rebate.

President.—Look at the difference in some of the prices. Does the list include all the materials that the Railway Board buy?

Mr. Peterson.—The 1st column does.

President.—It is rather important in this way, that it is a fairly big percentage of your total production.

Mr. Peterson.—This would include all the Palmer Railways but the actual quantities of ordinary steel paid for by the Railway Board do not amount to very much.

President.—I think that even this is about one-third of your total production.

Mr. Peterson.—Yes, including the rails. It used to be nearly three quarters of the production. Now it would be somewhere between ⅓rd and ½.

President.—Supposing you lost the whole order for rails in a year, what would you do with your steel?

Mr. Peterson.—We would have to shut the works. We could not roll the steel except in the form of rails.

President.—The works would have to be closed down?

Mr. Peterson.—Yes. I am talking of the present condition. The new mill is not equipped to roll anything except rails. In another three or four years, the position will be different.

President.—You have given your tin bar as 63,340 tons. It cannot be for one year. Is it for two years?

Mr. Mather.—Is it the total of the orders you have received for delivery this year and next year?

Mr. Peterson.—May be.

Supplementary Statement No. 21.

President.—Your debentures do not seem to have attained par at any time.

Mr. Peterson.—We issued at £98, then they rose to £99 and then they fell. The highest price I have seen for them is £92½.

President.—I take it that most of them are held in Great Britain.

Mr. Peterson.—In London.

President.—They ought to be quoted much higher in the London market.

Mr. Peterson.—That is probably due to the general depression in the Steel trade.

President.—Does that apply to debentures?

Mr. Peterson.—It applies to any form of investment. It is the uncertain security that depreciates the debentures.

President.—The point is that if debentures have to pay 7 per cent.—to-day it is really more—they are at a discount.

Mr. Peterson.—Yes.

President.—It may not be easy to raise any ordinary capital at this rate.

Mr. Peterson.—It will be impossible. I don't think that there is any chance of raising any capital just now in the United Kingdom.

Dr. Matthai.—When do you expect the next steel boom?

Mr. Peterson.—About ten years hence. I think that the difficulty with regard to the next boom is the condition of affairs in America where the output is steadily going up and where the productive capacity is steadily going up. That must react on the rest of the world.

Mr. Mather.—They have been saying that for the last 30 years and the effect on the export markets has not come yet.

Mr. Peterson.—It will come.

President.—It has been suggested recently that money can be raised in the country on an average return of 8 per cent.

Mr. Peterson.—I think that the very best evidence that you can get is the lowest quotation of our debentures. They are continually bought and sold. Look at the debentures of the Bengal Iron Company—a similar enterprise without the danger of steel. They fluctuate very much like ours.

President.—We allow 8 per cent. on debentures as we understand that they had been issued at a discount.

Mr. Peterson.—The net return to the company was 7·92, after deducting the discount, underwriting charges and everything else.

President.—What is the usual charge for underwriting and so on? Supposing you issue debentures at 7 per cent., what will it really cost the company?

Mr. Peterson.—The London market issues in the same way. It issues at a certain rate and at a certain discount.

President.—What will it cost a company that raises 8 per cent. debentures?

Mr. Peterson.—9 per cent. or a little over.

President.—8 per cent. debentures need not be issued at a discount.

Mr. Peterson.—It is very much a question of the market. If it is a public issue, they will have to attract the special underwriters. If it is taken by one large group it might be issued at par with an underwriting commission. I have sent you a note showing what sums have been raised recently and at what rate.

President.—The question we are concerned with is not some other industry but the steel industry either here or in the United Kingdom. Do you think that it would be possible to raise any capital just now?

Mr. Peterson.—I don't think that it is possible to raise capital in any form.

President.—What change in the circumstances do you expect?

Mr. Peterson.—It depends entirely on this company! If the company does well and there is a settled tariff, it might be possible to raise money in two or three years. The mind of the public is changing and changing rapidly towards the Steel Industry especially in India. There has been a great rise in the value of the shares in the last four or five months. One

or two large firms have been consistently circulating their clientele and saying that they are confident that the industry will be successful and that the industry will get protection and will be very successful in India. If that is borne out by actual results for a year, it might be possible to raise a large issue of capital in India or in England.

Mr. Mathias.—Your view is that it depends mainly on the results of the Tata Iron and Steel Company.

Mr. Peterson.—Yes, the possibility of raising fresh capital for the industry in this country depends entirely on the results of our works.

President.—Would it be sufficient if you paid your interest on the preference shares to induce the investors to come in or would he wait till the ordinary shareholders get something?

Mr. Peterson.—The ordinary share of Rs. 75 is standing at Rs. 32. The price of that share is a barometer. If it went up to Rs. 60, and earned dividends. I think that you could raise fresh capital.

Supplementary Statement No. 23.

President.—The estimate given in your letter dated the 10th July, 1926, does not carry us any further.

Mr. Peterson.—I am afraid it is an extraordinarily difficult thing to do. I suggest that you should ask Mr. Alexander on that. It is really his estimate.

President.—The trouble about this is that you have got the American plant in your mind because you have always dealt with America. The question arises whether a man buying a plant now would buy it in America.

Mr. Peterson.—That is the only possible way of getting reliable quotations.

President.—In your case when we estimated the present day value of your plant, we were guided more or less by the American conditions.

Mr. Peterson.—We spent a lot of time over it. I don't think that it is possible to get an accurate estimate.

Supplementary Statement No. 24.

President.—In Statement 24 you give the capital cost of the old and new open hearth furnaces and the duplex plant furnaces including converters. I just wish to know whether the last is simply for the furnaces or whether it includes the accessories too?

Mr. Peterson.—That is the actual cost of the whole plant. It includes things like gas producers; it would not include any steam, none of the costs of the general power plant; it would simply be the plant itself. I will give you a detailed statement showing the actual rates.

President.—The purpose for which I wanted this was simply to see whether the duplex plant was really cheaper.

Mr. Peterson.—I can give you very good evidence on that point as far as America is concerned.

President.—What your statement seems to show is that the duplex is nearly twice as expensive as the open hearth plant.

Mr. Peterson.—These were the actual costs of the open hearth furnaces at the time they were purchased. Some of these were built years ago. The first four were built a very long time ago. I think the basis of cost to take is the cost of the 7th furnace. The duplex were built at a time when prices were very high.

President.—What I wanted to see was whether you did well by going in for the duplex?

Mr. Peterson.—We had to go in for the duplex because of the scrap problem. Whatever it costs us we must be able to use our scrap.

President.—You mean that in India you must have a combination of the duplex and the open hearth?

Mr. Mather.—The duplex is not the only second process available.

Mr. Peterson.—I was showing in our case what the cost would be in building a new duplex and a new open hearth. However I will look it up and let you know.

Supplementary Statement No. 25.

President.—We come now to statement 25. What I wish to know is whether in your Technical Institute or laboratory you do any sort of research work.

Mr. Peterson.—That is done in the works itself.

Dr. Matthai.—Have you any department for research?

Mr. Peterson.—In our works we are investigating certain problems.

Dr. Matthai.—With reference to your raw materials or what?

Mr. Peterson.—One of the questions on which investigations were made was the efficiency of the boilers. Another refractories. The Technical Institute used to make enquiries of that kind before; then again there are researches into the use of raw materials such as bricks, discovery of new refractories and so on. All that is done by the prospecting department. Prospecting is going on all round our works for refractories and raw materials that are required.

Dr. Matthai.—And as a result of the research made in your own departments have you been able to improve your supplies?

Mr. Peterson.—Yes, a great deal in refractories.

Mr. Mather.—I understand that last year you set up a metallurgical department? That should help you to economise in your operations?

Mr. Peterson.—That would, but up to the present I do not think they have made any particular discoveries as regards actual steel making.

Dr. Matthai.—Have you ever considered the question of sending some of your students abroad?

Mr. Peterson.—There are seven students on metallurgical work at present. We have given you a statement showing the allotment of Technical Institute men to the various departments in the Tata Iron and Steel Company's works (Statement on page 162 of the Blue Book).

President.—What I rather had in my mind was this, no doubt you have got to follow other countries for a time but you cannot continuously go on doing it without making researches for yourself.

Mr. Peterson.—We are having all kinds of problems investigated.

President.—Can you mention one or two researches made by you which have really added to the efficiency of the plant or has brought down your costs? That is the kind of thing we want to know.

Mr. Peterson.—I think you had better ask Mr. Alexander about it.

President.—I mean industries won't advance unless researches are carried on with reference to their own conditions.

Mr. Peterson.—We do a lot of that.

Dr. Matthai.—Do your men contribute to scientific journals?

Mr. Peterson.—Yes. I think the last one was a paper on blast furnace by Mr. Keenan that was read in England, and I think Mr. Percival has written several papers.

Dr. Matthai.—Have you ever considered the question of sending Technical Institute men to other countries?

Mr. Peterson.—I am making a proposal now that we should pay the passages of any men who are willing to go. We should select two of the best men and pay their passages apart from the idea of the Institute paying them

scholarships. At present we have two men abroad, one I think in an electrical works in England and one learning coal mining in America whom we would employ when they come back.

President.—Do you send any of your students or any of your men to study the conditions in Europe?

Mr. Peterson.—We have one or two men here who have returned from Germany.

President.—Don't you think that it is rather important that your men should visit Germany more often than they do to-day in connection with steel? I think it is very important because they are really the people who are at the present day leading the steel industry both as regards practice and as regards marketing in Europe.

Mr. Peterson.—I do not think that German blast furnaces would be better than American furnaces. The total output of the country in America is so enormous that their efficiency must be very great. Their costs are high but that must be due to various causes.

President.—You must remember that Germany has not got the same kind of domestic market as America. America has got a very big home market. There may be internal competition in America but there is nothing like the condition under which Germany has to compete to-day. The German industry must be very efficient to be able to make any headway at all. Both your students and your men should be more in touch with German practice, that is all I can say. Your experts are Americans. They are very clever people but that does not mean that you are under an obligation to learn everything from America and nothing from Germany.

Mr. Peterson.—One of our experts recently went through Germany when he went on leave. Even to-day we hear from people in Germany who wish to come back to our works.

President.—What is the good of your men going there? The point is, you must systematically make attempts to study German conditions both as regards manufacture and marketing. It is very doubtful whether America would be able to compete in steel if her home market was not protected.

Supplementary Statement No. 27.

Mr. Mather.—I have a question to ask about statement 27. Explanation regarding loss in galvanised sheets in 1925-26. You tell us at the end of that note that under certain circumstances the yield ratio would be 94·11 per cent. and that "5·89 per cent. is the loss in the pickling process." That is not pickling only. Some of it must be due to other wastage?

Mr. Peterson.—That is so.

Exchange.

Dr. Matthai.—Going to the question of exchange, do you agree so far as the steel industry is concerned, with the Currency Commission that there has been a considerable adjustment in prices.

Mr. Peterson.—I don't quite follow what they mean.

Dr. Matthai.—With the exchange at 1*s.* 6*d.*, as far as the Steel industry is concerned, do you think prices of materials and labour in the country have adjusted themselves, that is dropped correspondingly?

Mr. Peterson.—I do not think it has come down owing to the exchange by 12 per cent. The only way the exchange would affect us is in the cost of imported stores; labour has not definitely come down. It makes no difference to the wages. The rupee price for labour is the same as it was three years ago. There has been no definite policy of reduction in the wages of labour as a result of the rise in the exchange.

Dr. Matthai.—Do you think the cost of living among your employees has gone down?

Mr. Peterson.—Probably it has gone up. I think the standard of living has risen.

President.—According to your figures there is a total saving of about Rs. 3,70,000 on the consumption of imported stores (Statement 28). That on the present output is just over a rupee a ton.

Mr. Peterson.—That is on the cost of imported stores and that is the only point at which the exchange can affect us.

Depreciation.

President.—You have sent us two statements on depreciation (supplementary statement No. 30 and statement No. 33).

Mr. Peterson.—Yes.

President.—Statement No. 33 came with your letter, dated 28th July.

Mr. Peterson.—Yes. It doesn't help you very much because it varies substantially. It is impossible to find out what the actual depreciation is either during the war or after the war.

President.—I think Mr. Fairhurst said depreciation at 4 per cent. would be enough.

Mr. Peterson.—On what.

Mr. Mather.—On the replacement value of the plant.

Mr. Peterson.—It is extremely misleading.

Mr. Mather.—Would you accept that as regards furnaces?

Mr. Peterson.—Depreciation on blast furnaces would be less, but on the rolling mills it would be more obviously.

President.—This is of some importance. The English rates allowed by Inland Revenue are 6 per cent. on the blast furnaces and 5 per cent. on the steel plant.

Mr. Peterson.—In the next column you see they have allowed 9 per cent. on the blast furnace and 15 per cent. on the steel plant. I don't think these figures can be taken really as a guide.

President.—Is this figure of 7½ per cent. on the blast furnace and on the steel plant, correct?

Mr. Peterson.—Apparently.

Mr. Mather.—It is important to realise that these are on the written down value.

Mr. Peterson.—Yes.

President.—If it is written down from year to year, it cannot give any indication.

Mr. Peterson.—No.

President.—In supplementary statement No. 33 you have given the average charges for maintenance and depreciation of the United States Steel Corporation as 7·45 per cent.

Mr. Peterson.—That includes an enormous number of plants.

President.—It is representative of all machinery.

Mr. Peterson.—Yes.

Mr. Mather.—It is difficult to know what this maintenance means as distinct from depreciation. For instance, you take into your works cost expenditure on maintenance and repairs.

Mr. Peterson.—Maintenance is a reserve which varies from 3 per cent. to 11 per cent.

Supplementary Statement No. 36.

President.—Everybody who talks of fabricated steel always takes our figure and works it up or down.

Mr. Peterson.—What else could we take? This has been arrived at after an exhaustive enquiry.

President.—In every case when they say protection is not adequate, they take this figure of Rs. 117 and they take the imported price and work down the figures. At present we don't know whether that Rs. 117 would be the correct figure to apply. There is one point that arises in connection with fabricated steel. On page 5 of the note sent along with your letter No. G. 890/26, dated the 27th July 1926, you say: "It will be seen therefore that our policy has been, as far as possible, to maintain the Indian engineering industry and we do, as a matter of policy, in consultation with the firms concerned, frequently reduce our prices in order to enable them to compete." In our enquiries we have not taken that factor into account. You will find in most countries the manufacturers of steel always give a certain amount of commission or rebate to the subsidiary industries. That is part of the normal condition of business.

Mr. Peterson.—Yes.

President.—But supposing we were to take that factor into account, what sort of adjustment should the Board make? We really don't know what your total sales are to the fabricated industries except from figures you have given us as regards engineering firms.

Mr. Peterson.—The point we want to make here is not that we have to make a concession, but that we have to make a large concession. The difference is about Rs. 1½ lakhs.

President.—In some products Germany gives a bounty of 20 marks for export purposes.

Mr. Peterson.—That is a Government bounty.

President.—No, they give a rebate to the subsidiary industries. What was the total quantity of steel supplied to the engineering firms?

Mr. Peterson.—I should think it might be taken at about 6,000 to 7,000 tons.

Mr. Mather.—You have given us the British standard.

Mr. Peterson.—Yes, 31,500 tons exclusive of wagon orders.

President.—For wagons this year?

Mr. Peterson.—It is about 20,000 tons.

President.—That comes to about 50,000 tons. It may mean a reduction of something like Rs. 5 lakhs.

Mr. Peterson.—Not as much as that. About Rs. 1½ lakhs to Rs. 2 lakhs.

Supplementary Statement No. 37.

President.—As regards this supplementary statement No. 37 do you wish us to print this letter, dated 29th July, about the structural sections used by railways? It is important one way. It would involve a somewhat prolonged enquiry.

Mr. Peterson.—I don't suggest that you should print that.

President.—I just want to draw your attention to the fact that we cannot act on a representation like that without giving the Railways an opportunity of explaining the position.

Mr. Peterson.—We will take it up to the Government of India direct. If you like, I shall withdraw it.

President.—It may remain, but I am only pointing out to you that it won't be easy for us to deal with it. If we were to do so, it would mean examining these particular railways. I don't think we can undertake that.

Mr. Mathias.—In a note on the protection of fabricated steel attached to supplementary statement No. 36 you say: "The Customs returns show the value of fabricated material without duty as Rs. 230 in March and Rs. 232 in April and May. These figures cannot possibly be correct. We know that the figure of Rs. 245 with duty is correct for ordinary imports."

Mr. Sawday.—I know the stuff is coming in at Rs. 245 with duty.

Mr. Mathias.—Can you give us the material on which you base your view?

Mr. Sawday.—Braithwaite's last order for East Indian Railway bridge came in at Rs. 9-12-0 a cwt. That is somewhere about Rs. 254 and still more recent quotations have come down. They are now quoting Rs. 10-12-0 with duty.

Mr. Mathias.—If you refer to pages 254 and 255 of the Blue Book, you will see that Messrs. Jessop and Company say in their representation that the British cost of fabricated steel is Rs. 220, whereas their cost would be Rs. 253. If your figure of Rs. 245 is correct there is only a difference of Rs. 8.

Mr. Sawday.—Perhaps they are more accurate than I am. They are quoting, I hear, Rs. 10-12-0 a cwt. with duty.

Mr. Mathias.—That works out to Rs. 215 to Rs. 220.

Mr. Sawday.—Yes. Rs. 245 was the figure I got before I wrote that note. That is a couple of months ago.

Mr. Mathias.—Where did you get that figure?

Mr. Sawday.—Messrs. Burn and Company.

Mr. Mathias.—May we take it that this is approximately correct for May and June?

Mr. Sawday.—Yes.

Evidence of Messrs. C. A. ALEXANDER and J. C. K. PETERSON, C.I.E., recorded on Friday, the 13th August 1926.

Estimate of Future Works Costs.

President.—I think we had better get on to the Supplementary Statement No. 46, that is, the estimate of future costs, that you sent in yesterday. I think I have already explained to you, Mr. Alexander and Mr. Peterson, the importance of this aspect of the case. It is very important that we should make as accurate an estimate as is possible as to the future costs, because if we don't one of two things may certainly happen. As far as possible of course we should like to consider a scheme from the point of view of making it effective for a reasonable number of years. If we find that this estimate is unreliable, it may not be altogether easy for us to do that and we may again have the difficulty that we had before, namely frequent enquiries and frequent alterations. On the other hand if we find that your estimate is too high we may cut it down to a figure which may not be to your advantage. These are the two aspects of the case which I should like you to remember, when we go on examining you. I have no doubt that you will agree that the scheme should be in force for a reasonable period if that is possible.

Mr. Peterson.—Yes.

President.—In this estimate, for general discussions, we had better stick to one or two products. I think that the best thing is to take the rail mill and the merchant mill.

Mr. Peterson.—Yes.

President.—What are the weighted averages for the new 28″ mill and the merchant mill for 1926-27 and 1936-37?

Mr. Peterson.—Rs. 84·1 for 1926-27 and Rs. 74·7 for 1936-37.

President.—The difference between the two is Rs. 9·4. We have got to see now what may account for that difference. Speaking generally there are three principal directions in which economy is possible. The first is the question of fuel. The second important factor is labour. The third is increased production. Is that right?

Mr. Alexander.—That is right.

President.—Let us see how much each factor has contributed towards the reduction of Rs. 9·4. First of all, as regards coal I think you have given revised figures for coal consumption.

Mr. Peterson.—That is based on 10 years as against 7 years.

President.—We are now taking 10 years. From the Supplementary Statement No. 53, I worked it out for the year 1936-37 as 3·09 tons. We had better take it as 3 tons. In 1925-26 it was 3·81 tons. There would not be very much difference between the consumption of coal in 1925-26 and 1926-27?

Mr. Alexander.—No.

President.—If we take 3·81 tons for 1926-27 and 3 tons for 1936-37, there is a saving of coal alone of ·81 tons or 4/5ths of a ton. Let us take Rs. 8 as the price of coal. It comes to Rs. 6·4, but that is not the total economy. You may expect a considerable reduction in labour and cooly charges, handling, trucks, etc. I do not know what the practice is or how much they would add to the price of coal for handling and other charges. It may be 20 or 25 per cent. I cannot say.

Mr. Peterson.—You mean handling of coal here?

President.—This cost is merely the cost of bringing the coal to the furnace!

Mr. Peterson.—You must add to that the saving in the burning.

Mr. Mather.—The less coal you have to burn in the producer the less the operating costs.

Mr. Alexander.—It will not amount to very much.

Mr. Mather.—It would amount to the average difference between your total operating cost on your producers and the cost of the coal going into the producer.

Mr. Alexander.—The savings effected would not amount to very much.

Mr. Mather.—If for every ton of steel you may make you have to use 0·8 tons of coal less than you now use, you will obviously save the cost of that amount and you will also save the cost of handling it in the works, the cost of handling it for burning, cost of removal of ash and various other charges. These are automatic reductions independent of any saving in the costs that you may make in other ways in the burning. Mr. Ginwala wants you to say whether this additional saving will be 25 per cent. of the value of the coal used?

Mr. Peterson.—I think 15 per cent. will be a fair calculation.

President.—About Rs. 7·4 would be accounted for by reduction in the cost of coal alone and for the rest, labour and other economies, efficiency of the plant and so on, you only allow Rs. 2 in ten years? That cannot be so. Take another small adjustment that we would make. This ten years programme means that you would have stopped operating the old plant for a considerable period.

Mr. Peterson.—That is so.

President.—I would just remind Mr. Alexander that in the previous evidence we calculated the saving this would lead to taking into account any reduction in the coke department or pig iron or anything like that. By merely scrapping the old blooming mill, the rail mill and the bar mill we calculated that you would effect a certain saving. In the course of the evidence on the 15th June 1926, at Shillong I suggested to you that you were losing about Rs. 7½ lakhs without making any adjustments for the cost of metal on a production of 87,825 tons in the old blooming mill, and then I suggested that if these adjustments were made it would be more, and then you said it would come to about Rs. 10 lakhs. Then on page 35 of the oral evidence of the Tata Iron and Steel Company I suggested a figure of Rs. 2·57 lakhs on rails alone. Then on page 38 of the same volume I suggested Rs. 6·86 lakhs. The total comes to 19·43. If you divide that by the full output of 560,000 tons we get a figure of somewhere near 3·4. If you were not operating any of the old mills that would be the saving on the figures of 1925-26.

Mr. Peterson.—1925-26?

President.—It must be shown somewhere.

Mr. Peterson.—If we calculate on the high production of the old blooming mill the saving would be greater than when calculated on the lower.

President.—It may be about Rs. 3 instead of Rs. 3·4. We are just trying to get approximate figures.

Mr. Peterson.—What I am suggesting is that you take a proportionate reduction on the 10 lakhs.

President.—So far as rails are concerned your production is 21,000 tons. On that basis the total came to Rs. 19·43 lakhs. Dividing that by the total output of 560,000 tons it comes to Rs. 3·4. If you like to take the proportion you can take Rs. 2 if you like. We have not taken into account any economies in labour that may arise or any economy that may arise merely on account of increased output. It is quite clear to me that so far as I am concerned I cannot act upon that estimate without some adjustments.

President.—It is very difficult to estimate, I agree, as to what economy you would effect by mere increased production. We have indications of what you have been doing in the past. If you start from the beginning and see how by the mere increased output you have been able to bring down your

costs, you will find there has been a good deal of reduction. Of course you cannot expect reductions in the same proportion as you go on.

Mr. Alexander.—It is not easy to make reductions in the future.

President.—I agree. I look at it this way. When we last reported, the greater extensions were hardly in operation to any considerable extent and then we took your production at 125,000 tons. From that you have gone up to 360,000 tons—an increase of about 250,000 tons. That has led to very great results. On top of that you are going to increase your output by another 200,000 tons. It must lead to substantial reductions. It may not be in the same proportion undoubtedly, but we cannot assume that the costs won't come down at all if the output is increased by another 200,000 tons. That is what the position seems to be on these figures. I don't think you would expect us to agree to that. Take your new rail mill figures. That gives you a very good idea of what you have been doing. I grant that you cannot expect a reduction in the same proportion, but you cannot expect also that you won't have any reduction.

Mr. Alexander.—No.

President.—That is what it comes to. I am sorry I could not give you more time to consider this point. I think it is worth while going into it, because as I pointed out this morning it is a very important point from everybody's point of view.

Mr. Alexander.—I don't profess to estimate the cost say within 5 per cent.

President.—The question arises whether you have taken into account all the points. Now speaking generally take labour. In every department you still propose to employ the same number of men. You would increase the number of men in proportion to your output.

Mr. Peterson.—It would not make very much difference if it does go down.

President.—Yes, if you are employing 30,000 men on an output of 360,000 tons.

Mr. Peterson.—I am taking the total wages bill.

President.—We will come to the wages presently. Take the 30,000 men you have got just now. It means if you are to increase the number of men in the same proportion as the output, it would come to 50,000, the wages remaining the same.

Mr. Alexander.—Not necessarily.

President.—I want to know as regards the men first of all what reduction do you expect to make? Take the men, leaving out the wages for the moment. We will assume that wages are constant.

Mr. Alexander.—20 per cent. increase.

President.—20 per cent. increase, but the production would have gone up by 40 per cent. or about 60 per cent. What is the result of that?

Mr. Alexander.—Labour cost per ton would come down undoubtedly.

President.—I don't know the basis on which these figures have been worked out. Let us calculate now. Roughly the number of men will go up by 6,000. You have got 30,000 men. The total wages roughly come to Rs. 140 lakhs. The incidence of that per ton is Rs. 45 roughly.

Mr. Peterson.—I think it would come down by a rupee per ton.

Mr. Mather.—More than that. Supplementary statement No. 56 which you have given us this morning shows your labour cost per ton as Rs. 37·25. At the present moment if your total labour charges are Rs. 140 lakhs and in 1926-27 you are going to produce 366,000 tons of finished steel, it means an average labour cost of Rs. 38 per ton. If you increase your output to 560,000 tons and increase your wages bill by 20 per cent., it means your average labour cost per ton of product is going to be Rs. 30 as against the present Rs 38.

Mr. Alexander.—You are taking the saving twice over.

Mr. Mather.—Which way?

Mr. Alexander.—The saving comes in by shutting down the mill

President.—We will have to make some adjustments.

Mr. Alexander.—The only way is to take it on all the products and find out what it actually comes to on the total.

Mr. Peterson.—A great deal of saving in labour will come in other departments.

President.—This figure that we took here was intended to cover all departments.

Mr. Peterson.—That is only for one product. Any really detailed and accurate estimate should take into account the plant as a whole.

President.—I intended to take two products as typical of steel.

Mr. Peterson.—There may be some error in the calculation if we only took two products. I cannot say unless it is calculated right through.

President.—You may calculate and give us the result.

Mr. Alexander.—There are many assumptions one has to make. I don't profess to be capable of estimating a thing like this within 5 per cent.

President.—We are only considering the factors which we might otherwise lose sight of entirely. As to what they may mean in actual calculations is a different matter. Here is a factor of importance that has not been taken into account. I think that disposes of the general points and now we shall take the different departments. You had better start from coke. In coke the cost will down from Rs. 11·25 to Rs. 10·50. There is a difference of about As. 12.

Mr. Alexander.—That is right.

President.—On what basis do you make that reduction?

Mr. Alexander.—The reduction will be in the cost above due to getting a higher production out of the Koppers ovens and on account of the increased tonnage due to the 4th battery of Wilputte ovens.

President.—I take it that so far as coke is concerned, you are taking credit for the gas that you get more or less in the same proportion.

Mr. Alexander.—In the same proportion as to-day.

President.—The spread is about 3·25.

Mr. Alexander.—You must remember that the cost above is where we can save. All the saving must be in the cost above.

President.—There are four or five points that we considered. When we were at Shillong you said you had made certain improvements in instalments, but they had not really been effective, because you were then taking down the ovens and rebuilding some of them. On page 8 of the evidence, dated the 14th June, 1926, you say that your coking time had dropped from 23·33 hours to 21·18 hours. I said that ought to show an improvement. Then you went on to say: "At the present moment we are rebuilding them oven by oven so as to put them in good shape to last until the 4th battery of Wilputte ovens is built." I said: "What it means is this: though the coking time has been reduced, you have not been able to benefit by the reduction, because of these alterations going on." You said: "We have been pushing fewer ovens." Then I said: "It really means a difference of 9 or 10 per cent. It ought to reduce your cost." You said: "Supposing 50 of them are operating and the coking time is 20 hours, the tonnage is bound to be high. But when the number of ovens in operation is less, the tonnage naturally comes down." We may assume that when everything has been put in order you would benefit by the reduction of 10 per cent. in the coking time.

Mr. Alexander.—I have done that. We were taking on an average of 10 years. We get the whole benefit of that.

President.—First of all we must consider that this point has to be taken into account. Whether the result would be 10 per cent. or 5 per cent., nobody can tell. That I am prepared to admit. You have shown a better practice. Even in June in the Wilputte ovens your coking time came down to 20 hours.

Mr. Alexander.—The whole saving is in the cost above. The cost above is Rs. 2-4-0 or Rs. 2-8-0. Three-fourths of a rupee on Rs. 2-8-0 is a reduction of 30 per cent.

President.—But since 1921-22 really speaking there has been very little improvement in the cost above materials.

Mr. Alexander.—That is exactly my point. It is going to be harder to bring that down in the future.

President.—Then you say you expect certain improvements in the Sulphuric acid plant.

Mr. Alexander.—In the calculations I have taken everything the same as to-day.

President.—What sort of improvements do you contemplate on page 9 of your evidence of 14th June 1926?

Mr. Alexander.—I cannot say at the moment.

President.—My recollection was that you said that the sulphuric acid plant had not been working for any length of time. In any case it is a fact that the sulphuric acid plant has not been working for any length of time.

Mr. Alexander.—It has been working for two or three years.

President.—I suppose I am wrong. As regards labour I want to take the labour in the blast furnaces and the coke ovens together. I am taking these two together in order to tell you what another company is doing in that respect. In Statements Nos. 71 and 72, you have given the labour figures for these two. The total number employed is (2,386 on the coke ovens and 2,939 on the blast furnaces) 5325. Your output of pig iron is 600,000 tons, which is about twice the output of the Indian Iron and Steel Company at the present moment?

Mr. Peterson.—I do not know what their output is at present.

Mr. Mather.—Nearly 300,000 tons.

President.—If you divide your total labour 5,325 by 2, it comes to 2,662. This is what Mr. Fairhurst said about the Indian Iron and Steel Company:—"We employ altogether 1,650 men. 600 are employed on the blast furnaces, 450 on the coke ovens and the balance are employed on the maintenance shops, power houses, etc." Their total of 1,650 men includes everybody. I pointed out to you the other day that your tables accounted for only 20,000 men. But you say that you have 30,000 men. If you take a proportion of that, the number would go up. Even if you don't do that, you have got 1,000 men more in half the plant.

Mr. Peterson.—If you wish to compare us with another plant we must have accurate figures such as we have filed. It is very difficult to compare our accurate detailed costs and statements with a statement made by somebody.

President.—There is a very big margin indeed if we add to this number, about half as many men again.

Mr. Peterson.—I should like to know what their total wages bill is, whether there is any contract labour included in that or not, etc. I want to be quite certain that you are comparing one thing with another that is comparable.

President.—Their total works costs do not appear to be any higher than yours.

Mr. Alexander.—I don't think that they have so much saving in labour.

Mr. Mather.—They pay a good deal more for their ores.

Mr. Alexander.—But they pay much less for their coal.

Mr. Peterson.—They have to sell at practically the same price as we do. I cannot understand where this very big difference comes in. We are perfectly willing to make a detailed comparison with their detailed costs.

President.—I would advise you to go and have a look at their plant.

Mr. Peterson.—Mr. Alexander has seen that and you might question him on the subject.

President.—I am giving you my impression.

Mr. Peterson.—You have not asked him his impressions. The whole of their pig iron is machine cast. Probably that will make a difference in the number of men. I think that we can get the figures from the Indian Iron and Steel Company and make a comparison.

Mr. Mather.—How much of your pig iron is sand cast?

Mr. Alexander.—20 to 25 per cent.

Dr. Matthai.—How much do you estimate this excess labour on account of sand casting roughly?

Mr. Alexander.—It is difficult to say.

Mr. Mather.—On the other hand by far the greater proportion of your iron is not cast at all.

Mr. Alexander.—It is not.

President.—If you would get the figures and make a comparison it would be very useful.

Mr. Peterson.—We can do that for you.

President.—The impression that I have gathered is rather a strong one. I certainly think that you can do with less labour.

Mr. Alexander.—We will take our Wilputte ovens and C and D blast furnaces and compare them with theirs. We can separate them.

President.—You can do that as you like. All the same, the point remains that you are employing a more expensive plant.

Mr. Alexander.—We cannot help that.

President.—As regards the reduction in the cost of pig iron from Rs. 26·50 in 1926-27 to Rs. 22·50 in 1936-37, what factors have you taken into account in arriving at that?

Mr. Alexander.—Mostly increased tonnage and decreased coke.

President.—Your coke consumption has been down for some time, is it not?

Mr. Alexander.—Yes, as compared with what it was previously.

President.—Partly as a result of using more scrap?

Mr. Alexander.—Yes, partly that.

President.—Do you expect to use more scrap as you go on?

Mr. Alexander.—Up to 10 per cent.

Dr. Matthai.—How do you explain the reduction of cost per ton?

Mr. Alexander.—We are using limestone instead of dolomite.

Mr. Mather.—In connection with pig iron, what have you taken as credit for gas at the end of ten years?

Mr. Alexander.—We made no change in the credit anywhere.

President.—That would partly be taken towards the reduction in the quantity of coal used?

Mr. Alexander.—Yes. We estimate 1·05 tons of coke per ton of iron which would be 300 pounds less than we are now using.

President.—As regards the ingots, you have taken the average cost of Rs. 52 in 1926-27 and brought it down to Rs. 44·00 in 1936-37.

Mr. Alexander.—It might be Rs. 43 or Rs. 45. I don't profess to be able to estimate within 5 per cent.

President.—Four rupees of that would come out of pig iron more or less. Perhaps you would be using more scrap.

Mr. Alexander.—Yes.

President.—Could you give us figures separately for the duplex plant?

Mr. Alexander.—I have not worked out cost sheets for the duplex plant.

Mr. Mather.—A part of it will be reduction in the producer gas?

Mr. Alexander.—It is again a reduction in the cost by increasing the tonnage. There will be very little difference between the cost of production of ingots in the duplex and the open hearth.

President.—Both costs will go down simultaneously?

Mr. Alexander.—When we started the duplex the cost was much above the open hearth. The duplex is charged with pig iron at Rs. 30 to 35 and the open hearth with scrap at Rs. 20 a ton, but as the duplex tonnage increases the costs in the two places will come much closer.

President.—Your producer gas—in 1925-26 in the open hearth was 6·21—and if you compare that with the duplex, 2·34 . . . .

Mr. Alexander.—But the open hearth producer gas cost will never go down to anything like the duplex.

President.—But the cost of producing the gas itself will come down, will it not?

Mr. Alexander.—We expect a saving of something like 20 per cent. in actual fuel by having these new producers. The lowest we can hope to get the gas producer costs down is just about double that of the duplex with the same amount of gas coal and the same amount of labour.

President.—We went into the difference it would make if you had these new producers. My impression is that you would use about 600 lbs. of coal per ton if you had the new gas producers.

Mr. Peterson.—No. We are using much more on the open hearth than in the duplex but we expect about 20 per cent. saving of coal by getting the new producers in the open hearth.

President.—What is your estimate when you have got the new producers?

Mr. Alexander.—We will save about 2 cwts. of coal or about 12 annas on an average *plus* some saving in labour.

President.—Now let us go into the figures for the new 28″ mill. In this department the production will go up from 150,000 to 260,000 tons. How take the spread from the ingot to the rail. In 1926-27 you give it as Rs. 27 and ten year later Rs. 25.

Mr. Alexander.—That is right.

President.—The output will have increased by 70 per cent.?

Mr. Alexander.—The saving has to come out of the cost above.

President.—In this continuous mill you show the spread from the ingot to the blooming mill. Does it not pass straight on to the rails?

Mr. Alexander.—Blooms pass right on to the rails but we have got to get the bloom cost to charge to the rails mill.

President.—This spread includes the cost of the blooms and the rails?

Mr. Alexander.—Yes.

The point is when the output has increased by 70 per cent.

Mr. Alexander.—All that has to be saved in the cost above the operating cost.

President.—What is the cost above taking the blooming mill and the rail mill together?

Mr. Alexander.—4·34 is the cost above in the blooming mill and in the new rail mill 13·2.

President.—That makes 17·54. The point is, so far as rails are concerned, it would be better if the cost came down on that particular output.

Mr. Alexander.—We know that.

President.—They come down only by Rs. 2.

Mr. Alexander.—Our seconds are running up to about 8 or 9 per cent. and we hope to get them down to 6 or 7 per cent. so we are not going to get much saving there. It has all got to come out of the operating expenses *plus* the savings on the exhibits.

Mr. Peterson.—The final spread we have given is Rs. 25. I think Mr. Alexander can give you the spread in America and in England.

Mr. Mather.—If you take the yield of blooms from the ingots throughout as they were in the first quarter of this year at 85 per cent., and the yield of rails from the blooms again the same at 86·4 that means that you need 1·37 tons of ingots per ton of rails.

Mr. Alexander.—Yes.

Mr. Mather.—On that basis in 1926-27 your ingots per ton of rails are going to cost you Rs. 71·2 against the finished cost of Rs. 79; that leaves you for cost above ingots Rs. 7·8. Ten years hence 1·37 tons of ingots is going to cost you Rs. 60·3 against finished cost of rails Rs. 69. That leaves cost above ingots Rs. 8·7 to turn the necessary ingot into a ton of rails ten years hence whereas it costs you only Rs. 7·8 in 1926-27.

Mr. Alexander.—Are you assuming that the yield remains the same?

Mr. Mather.—I assume the yield to be the same as at present.

Mr. Alexander.—I assume 87 per cent. yield in the blooming mill in both years. It would come to just the same thing.

Mr. Mather.—It costs you a rupee more to convert the ingot to the rail.

Mr. Alexander.—All I can say is that I do not profess to estimate closer than 5 per cent. when estimating costs 10 years hence.

Mr. Mather.—You will agree probably to this that since your figures for 1926-27 were pretty close to actuals we should be justified in assuming that the cost above ingots for future years cannot at any rate be greater than your present cost.

Mr. Alexander.—Certainly.

President.—Where the production goes up to 75 per cent. there may be some reduction. You can't expect a big one, but you will admit that there should be some reduction.

Mr. Alexander.—Certainly.

Mr. Peterson.—We can go further than that and say that there will be a slight improvement in the yield.

Mr. Alexander.—I have only taken it as 73 per cent. which excludes second class rails, although at home they get as high as 76 per cent. on a similar product.

President.—The credit that you take for second class rails in 1925-26 works out to about Rs. 42.

Mr. Alexander.—About that.

President.—I suppose there is not a constant market for second class rails in this country.

Mr. Peterson.—Very little.

President.—Does it bear any relation to the price of first class rails?

Mr. Alexander.—Not if the rails are produced in any large quantities. At present our production of second class rails is so great that it is impossible to sell them.

President.—Can't you get rid of 8 per cent.?

Mr. Alexander.—No.

Dr. Matthai.—Does it bear any relation to structurals?

Mr. Peterson.—It bears some relation to first class rails. If people were satisfied with second class rails, we can sell them at some price lower than the first class rails. We cannot sell the whole quantity at anything like that. We got one fairly large order for 5,000 tons.

Dr. Matthai.—It depends on the amount of construction going in the country.

Mr. Peterson.—They are not used in the constructional work. It is a most uneconomical section. Second class rails are sometimes used for tele-

graph posts and power lines, etc. Ultimately we shall have to put the second class rails back into the furnaces.

Mr. Mathias.—You have got no sale for them in the bazaar.

Mr. Peterson.—Up country they are used for beams for verandahs and things like that.

President.—It is rather an uncertain factor as to what credit you should take for second class rails.

Mr. Peterson.—Sooner or later they should be charged as scrap because we cannot get rid of them.

Mr. Mathias.—What do you do if you cannot get rid of them?

Mr. Peterson.—We can put them back into the furnaces. We have always contested that quite a high percentage of these rails can be used by the railways as rails.

President.—It would not be safe to do so.

Mr. Peterson.—They would be used in other countries.

President.—But the standard of safety in our country is higher than in other countries.

Mr. Peterson.—I don't know. Mr. Mather can tell you all about second class rails, how they are used, etc.

President.—During the war you got a very big price for second class rails.

Mr. Peterson.—We sold 1st class at Rs. 150 and second class at Rs. 200.

President.—As regards the merchant mills the jump from the total spread from the ingot to the bar is from Rs. 52 to Rs. 97, in 1926-27, that is Rs. 45. In 1936-37 it is Rs. 41.

Mr. Alexander.—I have assumed here another mill which is more costly to operate than the merchant mill.

President.—What mill?

Mr. Alexander.—A mill for rolling small rounds, jute and cotton dies, etc.

President.—You havn't got that yet.

Mr. Alexander.—No. We are rolling small rounds on the old 10″ mill. It must cost us Rs. 300 a ton to roll small round under ½″.

President.—You should not roll these things.

Mr. Peterson.—What are we to do with fishplates? We must roll them.

President.—But so far as this present merchant mill is concerned, how much do you expect to get out of it?

Mr. Alexander.—About 100,000 tons.

President.—Is that the maximum capacity of your new merchant mill?

Mr. Alexander.—The Consulting Engineers gave an estimate of 120,000 tons, but they didn't know the number of rolls changes that we have to make and the number of sections that we have to roll. They were assuming our practice to be the same as that in America.

President.—That is what we too ought to assume here. Why should you roll unremunerative sections?

Mr. Alexander.—It is not a question of rolling unremunerative sections. It is a question of rolling the number of sections to satisfy the trade. We cannot put in rolls and roll rounds for two or three weeks. The market won't absorb them. We have to roll rounds one day and something next day. We have to roll all sections in 2 months' time.

President.—This also doesn't show any substantial improvement in 10 years.

Mr. Alexander.—It would have, had I stuck to the merchant mill and not put in the extra mill.

Dr. Matthai.—Why is it that the cost above material on the merchant mill has gone up by Rs. 2 since last year?

Mr. Alexander.—I don't think it has.

Dr. Matthai.—The average for 1925-26 was Rs. 17·17 and I think your average for these 3 months is Rs. 19·34.

Mr. Alexander.—The cost above on the mill itself has not gone up. We got a large order for tie bars for the North Western Railway. We roll the sections on the merchant mill and finish them in the structural shop and all the expenses of finishing go against the merchant mill. It is about Rs. 2 to Rs. 3 a ton. The actual cost above on the mill itself was less.

President.—Was it in May?

Mr. Alexander.—It started in April. The merchant mill cost to-day would be Rs. 2 lower.

President.—Generally speaking I think the normal difference between the average price of rails and bars is Rs. 10.

Mr. Peterson.—In this country.

President.—Generally everywhere.

Mr. Peterson.—In England and America before the war it was Rs. 11.

Mr. Alexander.—In America it is now Rs. 15.

President.—The rails in America are sold at special rates, but my impression is that it would be about right to say that the difference was Rs. 10.

Mr. Alexander.—These are costs.

President.—They are reflected in the prices.

Mr. Peterson.—The cost of bars would be about Rs. 10 more than rails.

Mr. Mather.—It is not correct at the present moment.

Mr. Peterson.—It is not correct here.

President.—Before the Continental exchange reacted on the British prices, the difference was about Rs. 10.

Mr. Peterson.—That would be about right.

President.—I want to ask you one general question about these old mills. You have not got any mill on which you can roll fishplates except the 16″ mill.

Mr. Alexander.—We only can roll fishplates on the new 16″ mill. It is used to be called the new 10″ mill.

Mr. Peterson.—It is really the old bar mill. It was called new about 10 years ago.

President.—That 16″ mill—we must call old—from your point of view—is indispensable at present, because you cannot sell your rails without fishplates, but as regards the other old mills, what is the position?

Mr. Peterson.—There is no other mill on which we can roll the other sections.

Mr. Mather.—Mr. Ginwala is only talking of the bar mill. What would happen if you were to close it down apart from these fishplates?

Mr. Alexander.—If we didn't take these orders, people would not give us orders for other things.

Mr. Mather.—Such as what?

Mr. Alexander.—Big rounds, squares, etc., which are too big to roll on the merchant mill and angles and structural work too small for the old 28″ mill.

President.—How much does the structural material that you must roll on the old mill, come to?

Mr. Alexander.—Take the three months—April, May and June. Structurals would come to 3,800 tons in three months.

President.—On which mill is that?

Mr. Alexander.—The bar mill.

President.—It comes to about 15,000 tons a year.

Mr. Alexander.—Yes.

President.—What else?

Mr. Alexander.—Fishplates—1,736 tons.

Light rails—390 tons.

President.—In three months?

Mr. Alexander.—Yes. The total comes to 5,932 tons for three months.

President.—That makes 23,000 tons a year. Of these, fishplates are indispensable.

Mr. Peterson.—Yes.

President.—And the rest you say you must roll, so that you should not lose your orders in other directions.

Mr. Alexander.—By the 1st of January I expect to have rolls and equipment to roll 50 per cent., of what we are rolling on the bar mill now, on the merchant mill.

President.—That will leave you about 7,000 or 8,000 tons.

Mr. Alexander.—Yes, with the fishplates and light rails.

President.—Supposing you don't roll light rails, nothing is going to happen.

Mr. Alexander.—We cannot do anything else.

President.—I don't think that the works would close down if you didn't.

Mr. Peterson.—The heats would have to go back into the furnace. They cannot be used for anything else.

President.—For about 15,000 tons in all, you are running these old mills.

Mr. Alexander.—Just the bar mill.

President.—What about the old blooming mill?

Mr. Alexander.—For the same reason, light structurals. Old rail mill—8,463 tons.

President.—That leaves you about 8,000 tons in three months or 32,000 tons in a year, which you have got to roll in order to keep your market.

Mr. Alexander.—Yes, and in order to keep the blooming mill going and to roll billets for the bar mill.

President.—Which bar mill?

Mr. Alexander.—The old bar mill.

President.—Why should you roll them in the old blooming mill?

Mr. Alexander.—Because we are not equipped to roll them on the new mill.

President.—I don't understand.

Mr. Alexander.—We always roll billets for the old bar mill on the old blooming and rail mills. We are not equipped to do it on the new blooming mill.

President.—In what sense?

Mr. Alexander.—Four inch billets are rolled from blooms which come from the new blooming mill. They go through and are finished on the 24″ mill. They are to be taken outside the mill building and cut up at a shear. Additional equipment has been ordered but it will be sometime before we are able to roll them on the new mill.

President.—It is not a very intricate alteration.

Mr. Alexander.—No.

Mr. Mather.—It is in hand now.

Mr. Alexander.—Yes.

President.—When do you expect to put it through?

Mr. Alexander.—Sometime before the end of this year.

President.—Then, the old blooming mill goes out.

Mr. Alexander.—No, the old blooming mill has to roll blooms for the old rail mill.

President.—Why should you have rails in the old rail mill?

Mr. Alexander.—The old blooming mill must furnish the old rail mill with blooms as long as we run it.

Mr. Mather.—Would it not be possible to roll the blooms on the new blooming mill?

Mr. Alexander.—It is quite possible but we could not heat them on this side.

Dr. Matthai.—Does it come to this that to keep your market you have got to roll some section on these old mills and to use the mills economically you have got to roll some other things as well on them?

Mr. Alexander.—Yes.

Mr. Mather.—What would be the capacity of the 16″ mill running three shifts?

Mr. Alexander.—75 tons per day.

Mr. Mather.—Or 20,000 tons a year.

Mr. Alexander.—Yes.

Mr. Mather.—That could easily roll all the fishplates, big rounds and other things?

Mr. Alexander.—No. We can only roll fishplates and light rails and one or two other things.

President.—As regards the sheet mills, you expect to come down from Rs. 169 in 1926-27 to Rs. 135. At present you are working only 4 mills out of 9.

Mr. Alexander.—Yes.

President.—How many shifts are you working?

Mr. Alexander.—Three shifts.

President.—You have very nearly reached the full output of the four mills. The capacity is about 6,000 tons on an average per mill.

Mr. Alexander.—We require about 10 mills to roll that. We have to put in more mills.

President.—How many have you?

Mr. Alexander.—We cannot run 9 mills with the present motor. We cannot run more than 8.

President.—This 55,000 tons is based on how many mills?

Mr. Alexander.—Ten.

President.—You are now working four mills, which give you 22,000 tons. That is almost exactly the full output.

Mr. Alexander.—The Consulting Engineers' estimate for the 9 mills is 3,120 tons or 346 tons per mill. For the four mills it would be 1,384 tons and we are making 1,800 tons. We are running them at a much higher rate per mill than what the Consulting Engineers estimated.

President.—What I am not quite clear about is this. You expect an increase of about 2,000 tons a year. Would it take as much as ten years to get 55,000 tons? It is a very long time.

Mr. Peterson.—Mr. Alexander has been considering the question of profit that we could make on sheets and that is why he has not increased the output more rapidly.

President.—There is one thing which you and Mr. Alexander should remember. The total demand of the country is in the neighbourhood of 250,000 tons. If we are to put a duty as you suggest on galvanized sheets for the sake of your production of 10 per cent. of the country's demand, it would be a tremendous burden on the people. For that reason, it is essential that if

you really want to go in for galvanized sheets, you must expedite your production. You cannot expect the country to bear the burden for a period of 10 years in order to enable you to do it leisurely. When it is a question of levying a duty on 250,000 tons, I think that the country would expect a little more expedition on your part than the increase of two or three thousand tons a year.

Mr. Peterson.—I should like to answer that question in a general way. Provided the duty is not required for the purpose of revenue, this problem can be solved by a combination of a small duty and bounty.

President.—Leave out the bounty.

Mr. Peterson.—I am merely making a suggestion.

President.—Why should we give you 10 years?

Mr. Alexander.—It is not 10 years.

President.—I think the smaller your output is, the higher your costs are. Why do you propose to continue the evil for 7 years?

Mr. Alexander.—We are going to spend some money on the new mills in 1928-29 and then I have allowed three years after that to get full production.

President.—You have already got 9 mills and you are only using four.

Mr. Alexander.—The present motor is too small to drive 9 mills.

President.—Get a new motor if you want to get this particular product protected because it is not fair that you should go on doing things leisurely and expect the country to carry the burden for an indefinite period. You must make up your mind as to what you intend to do.

Mr. Alexander.—I think that I explained the sheet mills position fully at Shillong.

Mr. Peterson.—We are.

President.—Are you serious about manufacturing these sheets?

Mr. Alexander.—Consider that we are starting at present. We admit that we have made a mistake.

President.—Anyhow, if you did explain it to me, there has been no impression left on my mind.

President.—It does not appear that you are very serious from the way in which you are going. When you have got a tremendous market of 250,000 tons, you don't think it good enough to attempt to secure as much of it as possible.

Mr. Peterson.—I think that the estimated production of these mills in the original estimate was 36,000 tons a year.

Mr. Alexander.—Assume that we have made a mistake and we are starting now.

President.—What is the mistake that you have made?

Mr. Alexander.—We did not bring the right type of crew to operate the mills. We are starting now. In 1929-30 we promise the original estimate of the Consulting Engineers.

President.—That is 36,000 tons.

Mr. Alexander.—Yes. At that stage we will put in new mills and work up to 55,000 tons.

President.—There are two things in connection with this, the first is that the rate at which you proceed is unsatisfactory from our point of view, and, secondly, your costs cannot be determined by us if we are to make any proposals for a long period. Unless you make your estimates on any fairly reasonable production that you hope to attain, I confess it would be very difficult to make any recommendations. We cannot allow you to go on for seven years.

Mr. Peterson.—We started operating this mill only about two years ago.

President.—In the first scheme of protection you said you were going to make sheets and you got protection. Three years have gone since. Now you want another seven years. There must be some limit to this sort of thing. Tell me in how many years from now you expect to reach the full output? You must consider first of all whether you have got the steel.

Mr. Alexander.—During the last enquiry when I was up in Shillong you were criticising us because we had not got the new roughing mill and a lot of other things. We cannot get them all at once because we must undertake the amount of work which we know we can do.

President.—Then cut this out and say you will close this mill, and then when you are ready come up again and say you are ready to start.

Mr. Peterson.—By 1929-30 we would give you the whole estimated output of the plant as it stands at present, that is within three years.

President.—That is six years really speaking.

Mr. Peterson.—No, three years have not gone. It was not really running at all until January 1925. I may say the duty on sheets has done very little for us really, and I think probably it is quite well known that the revenues were required by Government.

President.—Then say give us the revenue duty and be done with it.

Mr. Peterson.—We cannot say that because a certain figure has to be obtained on your basis of reckoning. We must increase the figure on other classes of steel.

Dr. Matthai.—Are you seriously making a fresh suggestion of a revenue duty *plus* bounty?

Mr. Peterson.—That is one way of doing it. The import has increased very much more than anybody expected in the last two years.

President.—The difficulty is as regards ascertaining the costs. There is another difficulty that arises if you do not expedite your proposal and that is that the whole of the overhead has to be borne by a very small fraction of the production and that is an expensive thing.

Mr. Peterson.—The mill is an expensive mill but we think it is worth while making sheets in this country. It takes time like everything else.

Mr. Mathias.—Can you on your present plant increase the output of heavy structurals?

Mr. Peterson.—We can.

President.—Even if you reach 36,000 tons, it is a small percentage of the total demand.

Mr. Peterson.—That is true. It is smaller than when the mill was originally contemplated because the cost was too high. It will be Rs. 160 and Rs. 260 in 1929-30. We can improve on the production, but we doubt whether we can push the production any faster than that. It is really a question of training the labour. We are in exactly the same position as the Tinplate Company.

President.—They have increased their output much faster. If you take the figure of 1923 and compare it with that of 1924-25 you will find a tremendous increase.

Dr. Matthai.—They have brought down their labour costs very much.

President.—They have given us their labour costs. If you compare them with yours, unless you get down to their figures approximately, you won't be able to produce black sheets economically in this country at all.

Mr. Alexander.—I have assumed labour costs to be higher than what they are now.

Dr. Matthai.—I think they have reduced it by about 50 per cent. in two years.

Mr. Alexander.—That is mainly on account of increased production.

President.—Your labour costs come to Rs. 53 a ton?

Mr. Alexander.—We have to pay more for the covenanted labour. We had to take them according to the union rules. They laid down their wages; they selected the men and said what we would have to pay them, and that was nearly three times what they were earning at Home.

President.—We must get some better basis for calculating your costs than what you have given here. I must remind you of this fact that galvanized sheet is supposed to be a material chiefly used by the cultivators and therefore any suggestion which is likely to increase the burden on that class may not meet with the same success as you had with the other proposals.

Mr. Peterson.—I think the Indian Merchants Chamber has raised the question of sheets.

President.—When we talk of facts we must take into account the main factor: whether production is carried on on what we consider to be an economical basis, and on these figures it is very difficult to say that that is the case. We cannot give you a bounty simply because your plant is inefficient or because you made some mistakes.

Dr. Matthai.—Why could not you increase your output as the Tinplate Company did; they have increased their output from 8,000 to 35,000 tons.

Mr. Mather.—In the first year of operation they made 10,000 tons; in the second year 20,000; third year 30,000 and in this year they will probably make 35,000 tons, whereas their designed capacity is 28,000 tons, that is they have exceeded their original estimate by ablout 7,000 tons.

Mr. Peterson.—What I submit is that a question of one or two years more or less in an industry which has not been established in any country except in Wales and America should not be taken into account.

President.—Take the case of the Tinplate industry?

Mr. Peterson.—It is not the same product.

Mr. Mather.—Do you suggest that galvanized sheet is more difficult than tinplate?

Mr. Peterson.—It will take a considerable time to establish a Sheet industry in India but it is worth establishing. We have not endeavoured to push our production more rapidly because the quality will probably deteriorate and we will produce bad sheets and make a mess of the whole thing. We are tryiug to make it perfectly certain that we will produce good sheets.

Dr. Matthai.—Supposing you increased your output at the rate at which the Tinplate Company have done and there was a slight lowering of the quality —after all you are catering for the bazar—would it hit you in the same way as in the case of other products?

Mr. Peterson.—I think it will end in our not being able to sell at the price at which imported sheets are selling—we have had some experience of that already—and may end in shutting our market altogether. I do not think it is sound from the industrial point of view and from the point of view of the country. If the quality of our products were to deteriorate, it would be very much to the disadvantage of the country. I think the sound method is to get your product right first and then increase your output.

Dr. Matthai.—You are an applicant for protection, you are asking for a burden on the country?

Mr. Peterson.—I think ultimately the burden will be less on the country if we make good sheets and make quite certain that we are making good sheets before we increase our output. In the case of the Tinplate Company they have an assured market for every sheet they make.

President.—You will have a much bigger market—a commercial market.

Mr. Peterson.—But the real problem about the galvanized sheets is the question of the quantity of spelter.

President.—I am not going into the details as to the galvanizing part of it because really speaking you have not had sufficient practice, but the quantity of spelter that you use appears to be too high.

Mr. Peterson.—Undoubtedly. It is far too high.

President.—Look at the Tinplate people, how much they have brought down their tin.

Mr. Alexander.—That is what I admitted, because we have not had good men.

President.—That is the thing. When you have got the right type of men, when you have got the plant well equipped, and your lay out is correct, then is the time for you to come in for assistance from the State.

Mr. Peterson.—Quite frankly if the State refuses to give us assistance there is a chance of our shutting down the mill altogether. These things cannot be established in a day.

President.—Nobody says so.

Mr. Peterson.—My view of it is this that if it is a question of reaching full production and lower cost between a period of seven to ten years, it does not matter if we cannot do it in five, but do it in ten: that is no reason for refusing protection.

President.—If we were to make any calculations on our usual lines then if your output was as small as this, I do not know if we should be justified in allowing a proportionate overhead and a proportionate profit?

Mr. Peterson.—If you reduce the overhead on one product you must increase it on another.

President.—I am only suggesting to you that you are not going fast enough.

Mr. Peterson.—Your question is whether we are really anxious to push this production. If instead of 36,000 tons we promised a production of 60,000 tons and on that obtained a certain measure of protection and within the two years didn't get anywhere near that production, we would be very blameable and we would be very heavily criticised for doing it.

Mr. Alexander.—Had I made this estimate 18 months ago it would be very much different from what it is to-day. 18 months ago I expected full production by this time.

Dr. Matthai.—The difficulty from our point of view is that there is a big demand in the bazar.

Mr. Peterson.—The difficulty is the large import.

Dr. Matthai.—It is consumed in the bazar by a class of people on whom you don't want to levy an undue burden.

Mr. Peterson.—A great deal is consumed by industry by the railways and by the army.

President.—The railways come under the same category as the agriculturist.

Mr. Peterson.—For instance, large corporations like the tea gardens in Assam and North Bengal use very large quantities of corrugated sheets.

President.—For housing the coolies.

Mr. Peterson.—Yes, and for the factories. We use large quantities ourselves. It has become a favourite roofing for all kinds of industries and I may say once more that I have seen a price as high as Rs. 120 per cwt. in India during the war. It is worth while trying to establish the industry in this country.

Dr. Matthai.—There is also this difficulty. If you put an increased duty and raised the price of galvanized sheet the demand might fall.

Mr. Peterson.—That difficulty doesn't seem to arise. In spite of the protection in the past three years, the imports have increased.

Dr. Matthai.—That was because during the war and sometime after, there was not very much in the way of imports and there were accumulated requirements left unsatisfied which are now being met.

Mr. Peterson.—That is one theory. The import has been increasing rapidly in the last few years.

Dr. Matthai.—Whether you look at it from the point of view of the revenue duty or protective duty, you ought to be careful in putting a heavy duty on them.

President.—In the supplementary statement No. 46 you have given the cost of black sheets as Rs. 169 and galvanized corrugated sheets as Rs. 280 for 1926-27, a difference of Rs. 111, and for 1936-37 Rs. 215 for galvanized corrugated sheet, and Rs. 135 for black sheet—a difference of Rs. 80. You expect to save Rs. 31. That is all the saving.

Mr. Alexander.—We are using about Rs. 100 worth of spelter per ton of sheets.

Mr. Mather.—Mr. Ginwala's point is that the spread does not alter, although the output has gone up from 14,000 to 45,000 tons.

Mr. Alexander.—It was all spelter and the other expenses are very small. Out of a total conversion cost of Rs. 12·97, corrugation is only Rs. 10. It cannot be done below that. It is costing Rs. 6 to Rs. 7 at home.

Mr. Mather.—You add a certain percentage to the total works cost. That is now the costs are made up. That is the defect of the system so far as corrugation is concerned.

Mr. Peterson.—That includes handling and shipping.

President.—It does seem to me to be high.

Mr. Peterson.—Each individual sheet has to be handled.

President.—Why it should be handled?

Mr. Peterson.—The sheets have to be sorted and packed. Bundles have got to be made up and removed.

Mr. Alexander.—The bundles with the strips have got to weigh exactly so much.

President.—In tinplate manufacture there is much more handling and every sheet has to be seen and examined. They have to do many more things and their output is much bigger than yours. They have to make smaller bundles than you. They have to select their wasters from the primes and do a thousand and one other things which you don't have to do.

Mr. Alexander.—They have got many more Europeans on the plant than we have.

Mr. Mather.—Not in the finishing departments.

President.—I am just trying to explain that there must be something wrong in that method.

Mr. Alexander.—Their method of calculation is the same as ours.

President.—If you add the overhead charges in a certain proportion to the works cost, naturally the cost would go up. In their case there is no question of allocation.

Dr. Matthai.—I notice your cost of spelter is going up since last year.

President.—Do the 51,000 tons of sheet bars that you have got there include your own consumption as well as the consumption of the Tinplate Company of India?

Mr. Peterson.—That is for sale.

President.—How much would you require of sheet bar for your consumption as well as for their consumption?

Mr. Peterson.—We need 70,000 tons in addition to the Tinplate Company's 50,000 tons.

President.—That would be 120,000 tons.

Mr. Peterson.—Yes.

President.—You have got the spread from the ingot to the sheet bar in 1926-27 as Rs. 19. It comes down to Rs. 17 in 1936-37. I should have thought it would be more.

Mr. Alexander.—It is all in the cost above. It is Rs. 5.

President.—The reduction in that is due mainly to the reduction in the cost of ingot.

Mr. Alexander.—Mainly.

President.—In determining the overhead on the sheet bar, what method do you suggest? I want to get some idea as to what you would expect for overhead.

Mr. Alexander.—Do you want to exclude it from the total production?

President.—I want to see how the position would stand. For the sake of argument take Rs. 30 as your overhead.

Mr. Peterson.—That becomes a mathematical calculation if you really calculate it in the same way as you did it before. If you reduce it on this particular product, you must increase it slightly in the case of others.

President.—What I want to do is to ascertain the real cost of the sheet bar.

Mr. Peterson.—There is no question of duty arising here.

President.—What is it that you are really getting from the Tinplate Company of India?

Mr. Peterson.—If the overhead cost is so much per ton, the sheet bar being a semi-finished product, I should take the proportion of its price to the price of finished steel.

Mr. Mather.—The selling price or the works cost?

Mr. Peterson.—The works cost. There is no question of duty on this particular product.

President.—The total works cost of the sheet bar is Rs. 71 and the average, let us say, is Rs. 100. It would be 7/10ths.

Mr. Peterson.—That would be about right.

President.—What is the maximum capacity of your two mills—24″ and 18″ mills?

Mr. Alexander.—They will roll as much steel as the blooming mill can roll, that is about 65,000 tons a month.

President.—It is important in some way. Supposing the sheet bar manufacture is increased in this country, would it pay anybody else to take your sheet bar and make sheets in the same way as tinplate?

Mr. Peterson.—Probably it would, if we make a success of the sheet industry.

President.—It would all depend on the quantity of steel that you can spare to roll into sheet bar. It is for that reason that I was asking you in what proportion you would allocate.

Mr. Peterson.—It would be a good product to roll.

President.—It might pay a man to buy the sheet bar from you and start a sheet mill. Supposing sheets got protection, I want to get some idea as to what the position might be.

Mr. Peterson.—You might have sheet mills springing up in many places if there was a supply of sheet bar in the country.

President.—It might pay you to roll a semi-finished product.

Mr. Peterson.—It would, if there was a market.

President.—As regards steel sleepers, I think that it would rather be courageous if you could give us any estimate. I saw the plant again day before yesterday.

Mr. Peterson.—Now you will understand how difficult it is to work up a large production.

President.—It is a very simple product.

Mr. Peterson.—Yes.

President.—It is nothing more than a pressing machine

Mr. Peterson.—That is what it is.

President.—You take your sheet bar at Rs. 61 and the spread at Rs. 16 after 10 years. It seems to me to be pretty high. Of course your sleeper plant is located in a wrong place.

Mr. Peterson.—We should have to move it before long.

Mr. Alexander.—I am assuming here that we cannot sell second class sleepers. Now we use them in our works and give credit at Rs. 4-8-0 per sleeper.

President.—That is about half the price.

Mr. Alexander.—Yes, it comes to about Rs. 90 a ton, whereas we give credit for good scrap at Rs. 20 a ton.

President.—If you take the sheet bar at, say, Rs. 60, the real overhead comes under sheet bar because the sleeper plant is very small.

Mr. Peterson.—It must carry some overhead.

President.—It is so small that it is not worth bothering about.

Mr. Peterson.—You may take the overhead on the sheet bar.

President.—We will take the present figure of Rs. 70 and then take for the sake of argument 7/10ths of your present overhead, that will be about Rs. 35. It comes to Rs. 105. Then, you can add a little more your overhead on account of the sleeper plant. It is still under Rs. 120 even on the present figures.

Mr. Peterson.—We can sell some of these sleepers at Rs. 123.

President.—You have always been complaining that you can not up till now. Have you really considered the question of sleepers?

Mr. Peterson.—We are considering a proposal. Probably in two years, we agree, as you just said, that it would be necessary to move the Steel sleeper plant.

President.—You are asking for a bounty on sleepers. On these figures you neither require a duty nor a bounty.

Mr. Peterson.—I do not know where your information comes from. Steel sleepers have been purchased by the Great Indian Peninsula Railway at a very much lower price than Rs. 120.

President.—What do you call " a very much lower price "?

Mr. Peterson.—£6 a ton c.i.f. Bombay or some price like that.

President.—F.o.b. £7 works out to Rs. 119 including the duty and everything.

Mr. Peterson.—I believe that they could buy cheaper than that.

President.—You have got no evidence. The price we gave you was the price of which the Railway Board informed us they were arranging to purchase them.

Mr. Peterson.—That was the information that we got.

President.—Their sheet bar if it is Continental is probably cheap, and their pressing charges would not be anything like yours. If you take the price of sheet bar at £5.....

Mr. Peterson.—Well, under that.

President.—Then, it might enable them to sell under £6-10-0.

Mr. Peterson.—If we are assured of a price of Rs. 119, which is the price you suggest, I don't think that we would ask for anything more than that.

President.—You did not offer to take at that price.

Mr. Peterson.—We were never told the price.

President.—It is for you to quote. You don't expect the purchaser to quote you the price.

Mr. Peterson.—In the past, we were always told so.

President.—It is unusual for purchasers to quote prices.

Mr. Peterson.—The Government of India have always fixed the prices.

Mr. Mathias.—An application for the exemption from protective duties on certain steel products has been received, wherein it is stated that you do not manufacture them. We shall first of all take " rods, rounds, and squares below ½".''

Mr. Peterson.—We don't roll these.

Mr. Mathias.—The second thing is steel circles.

Mr. Peterson.—I suppose they mean circular plates. We have stopped making them.

Mr. Mathias.—The third is " octagon steel bars,'' and the fourth is half round iron bars. You have no objection to these being left out.

Mr. Peterson.—No. The only question is how far they can be used in substitution of some other material. I don't think that the import of these things is anything very large.

Mr. Mathias.—Here also no figures have been given.

President.—In this connection I would suggest that you might go through all the representations that ask for exemption and see if there are any points to which you would like to draw our attention.

Mr. Peterson.—I don't think that there is anything else except that in the representation regarding sheets. You don't want me to deal with the Burma Railway's reply asking for the general exemption of duties.

President.—No.

Mr. Peterson.—Here is a piece of information regarding steel sleepers which I should like to go down in the evidence: This is a report from Berlin. " Recently the Egyptian State Railways have asked for tenders for 30,000 tons of steel sleepers. The order has been given to De Wendel and Acieries de Michenelle. They quoted the lowest price for the whole subscription, *viz.*, £5-10-0 per ton Egypt.''

Dr. Matthai.—How long ago was that?

Mr. Peterson.—March, 1926.

President.—If the sheet bar is under £5, they might sell sleepers at that price?

Mr. Peterson.—If those prices are going to continue, we certainly require protection. I cannot, therefore, understand the price of Rs. 119.

President.—It may be due to the superior material.

Mr. Peterson.—That may be the reason.

(Continued on Saturday, the 14th August 1926.)

Labour.

President.—Before we proceed any further I wish to revert to the question of labour. In statement 44 you give the total number of employees, monthly paid 20,661 and weekly paid 9,939, or a total of 30,600. I do not know whether the figures are correct, if they are not you can correct them. The statement was given by one of your men and I must tell you that the Board do feel that, even after allowing for men employed in the yards and on other places, the number appears excessive. We shall of course consider what you have to say, but the Board do feel that the number of men employed is excessive.

Mr. Peterson.—The point is, does it mean very much extra cost? I may tell you that the labour cost per ton has been steadily going down.

President.—I think I discussed this before and I gave you my opinion that it was perhaps the increased output given by the machines working with greater efficiency which may have contributed to the reduction in the costs.

Mr. Peterson.—Obviously the company cannot consider this labour question in a hurry. It might do great harm from our point of view.

President.—Mere reduction in the number of men should not lead to any strikes.

Mr. Peterson.—Any statement by us now that we propose to reduce labour by a certain amount will have a great effect on our labour and we have got to consider carefully what the effect of that is going to be.

President.—That is no reason whatsoever in my opinion for employing an excessive number of men. If every other industry were to do that, they would not be able to bring down their costs.

Mr. Peterson.—That is the reason for labour strikes in other countries.

President.—Not so much on account of reduction in the number of men as on the question of increase or reduction of wages.

Mr. Peterson.—If the Board tells us in what direction labour is excessive we will try to do what we can. Do they mean actual labour employed in the works or the labour for handling the material?

President.—Both. We shall be glad to consider any explanation or any reasons that you may give, but the Board do certainly feel that a proposal should be made for reducing the number of men.

Mr. Alexander.—We propose to reduce it by 10 per cent. when we get the labour properly organized. Below that I cannot promise to go because we must play safe; we must have extra staff to take care of the *pujahs* and so on when they go out by hundreds.

President.—I am not referring to any reserves. I am referring to the actual number of men that you would require. Reserves of course have got to be kept in all services. Even after making allowance for these things, it appears to me that you don't need so many men. We do not mind treating your proposals for reduction of the number of men as confidential, if you wish.

Mr. Peterson.—Then we have no objection, but if we are asked to make a public statement we consider it to be extremely dangerous from our point of view.

Mr. Alexander.—We cannot give you any further detailed statement now except that we expect to reduce it by 10 per cent. Then when new units come we may have to increase them again, that is only natural.

President.—You can give us your views later.

Steel Sleepers.

President.—Then as regards sleepers under the contract, I think you said that you had already supplied sleepers to some railways or something to that effect.

Mr. Peterson.—Yes to the Bombay, Baroda and Central India Railway for two years. Other railways have not asked us for any. The Bengal Nagpur Railway have definitely adopted a different pattern. None of the other railways are using these sleepers. The only other railway that asked us to supply was the North Western Railway, that was about a year ago. We offered to supply at, I think, Rs. 9 a sleeper provided they accepted our pattern. We sent them up prints of the design we had and said we could supply from 15,000 to 20,000 tons provided we got information as to the rail orders. I understand they prefer wooden or cast iron sleepers. At any rate we have heard nothing further since then, until this last telegram.

President.—I think it would be for you to say that you were ready to supply sleepers and enquire whether the companies required them; then if they refused to take any.

Mr. Peterson.—At one time we did that. We asked the railways if they would take any sleepers, but none of them wanted them except the Bombay, Baroda and Central India Railway.

President.—Can you let us have the correspondence?

Mr. Peterson.—We will send the information afterwards.

President.—Please do so. It is very important in view of the fact that the railways are beginning to use steel sleepers and that you are in a position to make them.

Mr. Peterson.—I will send you all the correspondence with all the railways.

President.—May we take this estimate (statement 46), subject to the adjustments that you have stated from your point of view, as reasonably accurate for practical purposes for the whole of the period?

Mr. Peterson.—I consider it safe.

The fixing of a fair Selling Price.

President.—When discussing the question at Shillong I think you agreed that if a scheme of protection was put forward for a number of years, then having arrived at the fair selling price at the end of that period, a price should be fixed which should be between our estimate of the future fair selling price and to-day's price. Is that correct?

Mr. Peterson.—I think I said it would have to be made a little higher for the initial period.

President.—That cannot be done without varying the amount of protection, and should, if possible, be avoided. Supposing your costs are 100 to-day and 80 ten years hence and we take, say, 90, that price of Rs. 90 would give a new industry a better start because it will begin to operate, after five years, whilst in your case it may be a very great inducement to you to work down your cost to Rs. 90. It is very important from the country's point of view.

Mr. Peterson.—I quite agree that protection should be put as low as possible but I deprecate any attempt to pitch it at a bare minimum. If it is adequate I don't think there is any objection.

President.—As I put it to you, if you get a higher price in the first half of the period there is less inducement to work down your costs, and if a new industry starts to-day and gets going five years hence it does not get such a good start.

Mr. Peterson.—That is true.

President.—Supposing we took any period and calculated that within that period you would earn so much, not necessarily in any particular year, that I think ought to meet the case?

Mr. Peterson.—If you take the total earning as calculated in ten years and divide that into half and take that as the average for the first five years we have no objection.

President.—So far as you are concerned in the first half of the period you must be prepared to accept a lower price than would suffice to meet all the charges.

Mr. Peterson.—That I say would be dangerous. Any mistake in the calculation may render the protection inadequate.

President.—We are assuming that it is not inadequate. The only thing is that instead of Rs. 240 lakhs in the first year you make, say, Rs. 180 lakhs in the first year, 200 in the second, and so on. In the first year you may not be able to make the full amount of depreciation, but you may be able to make more later on and carry backwards so to say.

Mr. Peterson.—I think that would be a reasonable scheme.

President.—A new industry should have a fair start, but it must not expect a rate which is too high.

Mr. Peterson.—I think it ought to get a rate which is too high otherwise you would not get a new industry starting at all. Just let us take it from the profit and loss point of view. Let us take it at a hypothetical figure of, say, Rs. 180 lakhs. Let us take Rs. 120 lakhs as being a fair amount to deduct on account of interest on working capital and depreciation. That leaves Rs. 60 lakhs. Supposing the scheme is like that, then that is barely sufficient to pay dividend on the 1st and 2nd preference shares. That would not encourage any industry to start.

President.—Take the 10 years basis. If it is obligatory on you to lay aside an average of 6¼ per cent. for depreciation, you may lay it aside in such sums as at the end of that period will make up the aggregate you should have accumulated. In the first year you earn, say, Rs. 180 lakhs and Rs. 120 lakhs is enough to pay your dividends and profits and everything. Then the balance of Rs. 60 lakhs will be the saving in that year for depreciation, and as your earnings increase, you are under an obligation to make up the balance. After all you do not require to spend at once the whole of the depreciation every year. It is towards the end really speaking that you want a substantial amount, is it not so?

Mr. Peterson.—Yes.

President.—So you think a scheme such as I have suggested might serve the purpose?

Mr. Peterson.—Yes.

President.—In the estimates in the statement at page 26 of the Blue-Book what have you assumed as the quantity of coal you expect to use?

Mr. Alexander.—You can take the same proportion right through; that is all I did in the first instance.

Mr. Peterson.—There is one question you asked about rails, namely, what difference in our opinion it would make in our works costs if our orders rose from 150,000 to 200,000 tons. I would just meet the point. We consider that this would enable us to reduce our costs by Rs. 4 to Rs. 5 per ton over the whole quantity.

The Development Programme.

President.—In connection with the costs one other point arises. I think I asked you to give us an estimate of the additional expenditure that you will have to incur to work up to an output of 420,000 tons. (Supplementary statement No. 5.)

Mr. Alexander.—And shut the old mills?

President.—Yes.

Mr. Mather.—This expenditure here would not merely enable you to shut down the blooming and rail mills; it would enable you to get your production

up to 420,000 tons, and would also provide for a large part of the additional expenditure required to bring you up to your final output of 560,000 tons of finished steel.

Mr. Alexander.—That is correct.

Mr. Mather.—Are you working practically on the limit of your power supply at present?

Mr. Alexander.—We have nothing in reserve.

Mr. Mather.—Your position is that apart from an expenditure of that kind you will probably be able to produce 420,000 tons on your electrically driven mills, but it would not be safe to do more because you have no reserve?

Mr. Alexander.—Then we won't have enough to run the roughing mill.

President.—I take it that the programme outlined in supplementary statement No. 5 would enable you to effect the fuel economy that you contemplate?

Mr. Alexander.—That is right. Rs. 7 lakhs for fuel economy and Rs. 2 lakhs miscellaneous.

President.—Is it for putting in the new producers?

Mr. Alexander.—That is mainly on the boiler plant and power houses. The producers are separate.

President.—There is a separate item, I see, Morgan producers for the open hearth.

Mr. Alexander.—As a matter of fact I dictated a letter this morning asking for sanction for Rs. 6 lakhs to be spent on fuel economy.

President.—I take it that you propose to expedite this programme as much as possible.

Mr. Alexander.—The first thing is to get over plans laid out and the engineering done.

President.—There are some items which are considered as urgent when we met at Shillong.

Mr. Peterson.—You asked us what additional equipment was necessary to obtain 420,000 tons of finished steel and to shut down the old mills. This is the statement worked out on that basis.

Mr. Alexander.—We have moved it forward more than a year.

President.—450,000 tons is about midway between your present production and your ultimate production.

Mr. Peterson.—Yes. 1929-30—460,000 tons.

President.—What we are concerned with is 1927-28.

Mr. Peterson.—390,000 tons.

President.—Your output has not reached the amount estimated by us except in the first year.

Mr. Alexander.—That was because we were too sanguine.

Mr. Peterson.—

	Board's estimate.	Actual.
	Tons.	Tons.
1st year	250,000	247,982
2nd year	395,000	319,957
3rd year	400,000	360,000 (expected).

President.—If your estimate for 1926-27 was 400,000 tons you were out by 40,000 tons.

Mr. Peterson.—We might get more than 360,000 tons.

President.—I think that on the last two months production of the duplex, I should not be surprised if you approached our estimate more closely.

Mr. Peterson.—We might get it.

President.—They are better figures than you would expect in the hot weather months?

Mr. Alexander.—That is just the point. We have been very fortunate. This is the first year in which I have seen such good results the first quarter.

President.—According to the figures given here in the second half of the year you get about 20,000 tons more on the open hearth than in the first and you have not begun the second half of the year yet.

Mr. Alexander.—The production will go up in October.

President.—Last year from April to September the output of the open hearth was 100,000 tons and from October to March 119,000 tons. That I take it would also happen in the duplex to some extent.

Mr. Alexander.—Yes.

President.—So that you may after all reach our estimate of 390,000 tons.

Mr. Alexander.—We won't reach 390,000 tons.

President.—You don't think so?

Mr. Alexander.—No.

President.—The point arises not so much in connection with the output and overhead. That is why I should like to know what the position may be.

Mr. Mather.—As far as the estimate is concerned, it is near enough.

Mr. Peterson.—Yes.

Prices.

President.—Now as regards the prices in our previous calculations I think we took—and you did not take any exception to that course—the average price of 1st class material in all cases. Whereas, as a matter of fact, ordinarily it should be the average of all classes.

Mr. Peterson.—In the last enquiry I think we ignored that question.

President.—Ignoring that question means a considerable difference. You may see that from some of these statements.

Mr. Peterson.—Yes.

President.—I want to see what the position is going to be now. As regards supplementary statement No. 19, what I wish to know is whether any part of the production is taken as scrap. I want to see what happens on the works side as regards second class materials, cuttings and so on. We need not go into the second class rails, because the works costs with the actual price of second class rails, or the price of scrap if they go back to the furnaces.

Mr. Alexander.—90 per cent. is credited at the depreciated value of the second class rails, *viz.*, Rs. 40 a ton.

President.—Let us take heavy structurals. The average price realised for some of them is Rs. 141·33 but the average price for all heavy structurals is Rs. 139·53. There are some materials which realised an average price of Rs. 118·72 only. Are these second materials?

Mr. Alexander.—It is a first class product.

President.—That makes a difference. Then for cuttings the average is Rs. 52·01.

Mr. Alexander.—That is credited at Rs. 20.

President.—There may be an adjustment necessary in that case.

Mr. Alexander.—Some is credited at Rs. 20. Where we have long lengths of 20′ or over if we get an order for bars 18′ long, we cut off 2′. It is on the books at first class price.

President.—It is a very small percentage. We can leave it out.

Mr. Peterson.—Yes.

President.—What about the second class material?

Mr. Alexander.—That is largely from old stock. Our present rate of second class material is only about 1½ per cent. of the product.

Mr. Mather.—As the manufacture is going on now, there is not likely to be any complication about the second class material, because the percentage of production is low.

Mr. Alexander.—Yes.

Mr. Mather.—That would apply to light structurals and bars as well as heavy structurals and plates.

Mr. Peterson.—For second class plates we get a few rupees less in the bazaar.

Mr. Mather.—Taking into account the fact that the difference in price is less and the quantity is also less during these periods, do you think that the effect of that on the total price is almost negligible?

Mr. Alexander.—It would not be more than a rupee. It would be less than a rupee because the quantity won't be anything considerable.

President.—Take the light structurals. The first class material is Rs. 137·71. The average for all is Rs. 133·76, the difference being Rs. 4, though the second class material is Rs. 98·51. It may be due to the quantity being small on an average.

Mr. Alexander.—Considerable amount of that is out of old stock.

President.—As regards the future it should be negligible.

Mr. Alexander.—It would not lower the average price by more than a rupee.

President.—Does the same thing apply to bars?

Mr. Alexander.—Yes.

President.—In the case of bars there is a difference of Rs. 5. Rs. 142 first class bars and Rs. 137 for all bars.

Mr. Alexander.—In bars it may amount to more than a rupee. I would say not more than Rs. 2 on account of having to cut stock lengths into shorter lengths.

President.—I thought I should bring this point to your notice. If you have got to say nothing naturally we have got to say nothing.

Mr. Alexander.—It would not be more than Rs. 2.

President.—What about plates? The price of first class plates is Rs. 141·39 and the average of all is Rs. 131·72, a difference of nearly Rs. 10.

Mr. Alexander.—That is on account of the big percentage of scrap.

President.—What is your position as regards that?

Mr. Alexander.—They are sold at a very low price. They are credited in the cost sheets at the price we get.

President.—Would it come under this Rs. 66·74?

Mr. Alexander.—Last year we credited it at Rs. 20 per ton right along. Since the 1st of April we are crediting at Rs. 35.

Mr. Mather.—That may cover it fairly well, but you have actually realised Rs. 66.

Mr. Alexander.—We actually credited on the cost sheets with only Rs. 20. We have made a profit on the stock and not on the mill.

President.—What happened was the works only got Rs. 20 and the stocks got Rs. 66.

Mr. Alexander.—That is right, and we changed that on the 1st April. That is one reason why the plate mill costs dropped so rapidly since April.

President.—Are these cuttings abnormal or is it about the average percentage?

Mr. Alexander.—It is normal for the class of work we do. We take a lot of orders which similar mills at home don't. In the case of narrow plates at home the purchaser would have to buy wide plates and cut them himself.

Dr. Matthai.—Would you put the normal as high as 12 per cent.?

Mr. Alexander.—Yes, it would be 15 per cent.

President.—In that case, this system does not give you a correct idea of the position as regards plates.

Mr. Alexander.—That is right. If you add the two together, it is about 11 per cent.

President.—If we had to make some adjustment in the realised price, it would be far more difficult than if we had to do it in the works cost.

Mr. Peterson.—It is difficult.

President.—It is a substantial percentage.

Mr. Peterson.—This is analogous to second class rails.

President.—For one thing the plate mill is not working to capacity.

Mr. Alexander.—It should be penalised to that extent.

President.—You give the benefit of that to the stocks and not to the works.

Mr. Alexander.—We are only crediting Rs. 35 when we are getting Rs. 40 and Rs. 45 because some of it goes to the open hearth.

President.—Those may be heavy cuttings.

Mr. Peterson.—I think that we took Rs. 35 as the average.

Mr. Alexander.—We kept it on the low side so that we might not have to change it.

President.—If you take Rs. 109 for second class then that average for Rs. 35 is very low. You should treat this on the same footing as second class rails.

Mr. Peterson.—The point is that we never take credit for the second class material. It is not second class in the sense that second class rails are.

President.—These figures do not show how much you use in the open hearth and how much is sold.

Mr. Peterson.—We have not given you those figures.

Mr. Mather.—In the rail mill, you have given two entries, one for scrap and one for second class rails. Instead of that, you combine the whole thing at the plate mill and give your estimated average.

Mr. Alexander.—Yes. If you take that Rs. 20, it makes a difference of Rs. 5 in the cost per ton of plates.

President.—What I want to know is to get some idea as to how much of the material you ordinarily produce on the plate mill is scrap and how much of that is actually used by you as scrap pure and simple.

Mr. Alexander.—That is not shewn in the cost sheets.

President.—That is what I want to get some idea as to your real costs.

Mr. Alexander.—This Rs. 35 is merely an arbitrary figure. In one particular month it may all have been sold.

Mr. Mather.—You must make a certain amount of unsaleable material.

Mr. Alexander.—We have sold everything.

President.—You must then take credit at Rs. 66. We are now trying to ascertain what your plate mill cost was in 1925-26. In that case we must take Rs. 66·74 per ton as the value of the scrap which ought to be credited to the plate mill.

Mr. Alexander.—We will send you a statement dividing up the amount of scrap on the cost sheets last year showing how much was sold and how much went to the open hearth.

President.—I am discussing the plate mill only for the moment.

Mr. Alexander.—If we credited the scrap at about Rs. 55 as against Rs. 20, our cost would have been Rs. 10 to Rs. 12 a ton less.

President.—When any part of your plant which is already expensive, if you add something more than you should, it makes it appear still more

expensive. I think that I drew your attention to this point in the case of the old mills. The same thing is happening here in a different manner. I want to know what the plate mill is really doing.

Mr. Alexander.—We shall send you all the details.

President.—In making the adjustment, you should take the price of second class material cost.

Mr. Alexander.—Yes.

President.—I have not yet examined the realized prices in any great detail, but the impression created in my mind is that in most of these products the average price actually realised by you is a little higher than the c.i.f. price *plus* the duty.

Mr. Peterson.—About Rs. 5 or 6 more.

President.—I think I should like to consider what your position will be when your output increases and when somebody else comes in.

Mr. Peterson.—I don't think that we will get anything as high as that for the whole production. The drop will begin from now as the output increases. We are finding less profitable market for our products.

President.—I want some more information about corrugated galvanized sheets because your realised price is considerably higher than the c.i.f. landed price *plus* duty.

Mr. Peterson.—You want to know which stations they are going to. That is the only way to get it.

President.—I want to know some information about the locality of the market, and so on.

Mr. Peterson.—We can give you that. For which particular product do you want it? You want only for galvanized sheets.

President.—Is there any large demand for black sheets?

Mr. Peterson.—The orders for black sheets are mostly from wagon builders.

President.—How is it that you get more for plain sheets?

Mr. Peterson.—They are better sheets.

President.—Is the quality of the imported sheets the same as yours?

Mr. Peterson.—Yes.

President.—We don't get separate figures for plain galvanized sheets. What is the percentage of galvanized plain sheets to the galvanized corrugated sheets?

Mr. Alexander.—2,400 tons as against 11,000 tons.

President.—Will that percentage be maintained? It is a considerable percentage in that case.

Mr. Alexander.—10 to 15 per cent. would be a good average.

Mr. Mather.—It was 20 per cent. last year.

Mr. Alexander.—Yes.

President.—You say that 15 to 20 per cent. is plain galvanized sheets.

Mr. Alexander.—Yes.

President.—And black sheet?

Mr. Alexander.—About 30 per cent. of the total sheets rolled. We would sell 30 per cent. as black sheets and 70 per cent. as plain and corrugated galvanized sheets.

President.—15 per cent. of 70 per cent. would be plain galvanized sheets.

Mr. Alexander.—Yes, or a little over 20 per cent. of the galvanized sheets.

Mr. Peterson.—Do you want the rates to each market and the freight advantages to each?

President.—Yes. As regards the corrugated sheets, you are favourably situated. You can sell in the best market available.

Mr. Peterson.—The largest market will be Calcutta. At present we have not gone there, because upcountry prices are higher.

President.—As regards prices generally for making any comparison do you agree that it is no use taking the present British prices at all?

Mr. Peterson.—I understand that the prices are a little higher after the coal strike.

President.—I don't know whether the Continental prices would in any way be affected by the prices in Great Britain.

Mr. Peterson.—I think that to some extent they would be.

President.—Perhaps the safest thing is to take the pre-strike prices.

Mr. Peterson.—Yes. The first quarter of the year would probably be the best figure to take.

President.—There has not been very much alteration in Continental prices in the last few months. The average price of beams in 1924-25 was Rs. 92, in 1925-26 Rs. 82 and now it is Rs. 77. There has been a fall but the fall since the last quarter is not so great. Judging by the present tendency if there is any drop it may not be very great.

Mr. Peterson.—We have maintained our prices fairly steadily since the last three months. It is evidence that the English rates are stable, I think.

President.—In considering structurals, would beams be the thing to take?

Mr. Peterson.—Yes. That would be the best thing to take.

President.—Should angles be taken separately?

Mr. Peterson.—They may be taken together.

President.—Light structurals may be taken as bars more or less?

Mr. Peterson.—They are all the same type of product as bars.

President.—Except that they fetch a slightly higher price, that is all the difference, is it not?

Mr. Peterson.—Yes.

President.—Supposing we propose a scheme which is intended to cover a period of seven to ten years, and if in the first year you find that you were getting, say Rs. 10 less than we expected you to get on an average, will you go to the Government and ask for assistance? If you do, the answer of the Government of India may naturally be that this scheme is for ten years and that you cannot expect them to hold an enquiry at the end of one year.

Mr. Peterson.—Rs. 10 would be a rather high figure; that would mean a difference of Rs. 40 lakhs on the total production.

President.—In considering this point I must remind you that the scheme, if it is one for seven or ten years, contemplates that there should not be frequent enquiries.

Mr. Peterson.—I should take the chance, if it is adequate.

President.—There is no point in putting forward any scheme for any length of time if on the slightest pretext you were to go to the Government of India and ask for an enquiry.

Mr. Peterson.—We should not do that.

President.—Would it be possible to get quotations for rails from the new combine through the Director General of Stores?

Mr. Peterson.—It is very difficult to get prices for rails and these people will not tender unless they know that the tender is a serious one. You ought to have very good evidence from the recent quotations to the Palmer railways.

President.—They called for tenders about April or so, but at that time nothing was settled. Since then this combine has come into being and that might tend to produce higher prices. If there is a combine they must quote you a price.

Mr. Peterson.—They may quote the minimum price of £6 but that is merely hypothetical. Any member may quote as much as he likes.

President.—The price of rails is a very important factor in this enquiry. It gives some idea of the level of prices that steel ought to reach.

Mr. Peterson.—I have information as to the price the English railways pay for rails, but that does not help you much because I cannot give you the source of it. I think the price was £7/5.

President.—Could you try and get us a quotation?

Mr. Peterson.—I could not get a quotation myself. They would not quote. When our London office asks for a quotation they want to know whether there is any actual order otherwise they won't quote. I can ask for quotations if you like.

President.—So far as the trade papers go they simply say that this combine has been formed.

Mr. Peterson.—For the last 15 months the price for rails has been £8 in England and £7/5 for export; that is what we get.

President.—That may be taken as a fair average price?

Mr. Peterson.—Yes, for large orders.

President.—As regards sleepers you were not very serious in the last enquiry and it does not appear to me that you are very serious now.

Mr. Peterson.—We were not going in for sleepers at the time and for that reason we did not get all the information you would like to have. I can get you quotations for sleepers as well if you like; that would be for Continental sleepers of course.

President.—In connection with that we understand there is going to be a combine, so there may not be any difficulty about getting quotations now.

Mr. Peterson.—The information I have got is that the British Railmakers Association have now got a standard price of £6-7-6 for export; that is about the month of March. Since then the position has changed. There is some information about quotation for rails this year for the French colonies —600 tons of French rails at 748 francs, delivery Dunkirk, and another 1,200 tons of sleepers for the same railway at 740 francs. That is a pretty low price at the present rate of exchange, £4·80. These orders are dated the 26th April.

President.—You have not given me the Continental exchanges.

Mr. Peterson.—We are sorry. We took the exchange at 154·35; the rail price is £4·85 and the sleeper price £4·80. All these various information that we get from the Continent lead us to believe that it is impossible for us to quote anything which they are likely to accept if we are to quote in open competition with the Continental material.

Mr. Mather.—Franc prices change enormously with the exchange and it may lead to substantial error if you do not convert the franc at the rate of exchange prevailing on the date the order was placed.

Mr. Peterson.—That is so. Would you like me to get a quotation for sleepers for reasonable quantity, say, 10,000 tons and for 90 lb. rails?

Mr. Mather.—Yes.

Mr. Peterson.—Would you like both English and Continental if possible?

President.—Yes. What about cast iron sleepers?

Mr. Peterson.—Do you want the price for that?

President.—Yes.

Mr. Peterson.—The last information we have is for orders placed for the North Western Railway. The prices were for Indian delivery Rs. 84, Rs. 76, Rs. 72 and Rs. 68. They would not bring cast iron sleepers from abroad.

President.—What is the advantage of using steel sleepers?

Mr. Peterson.—I don't think there is any particular advantage. The railways had come to the conclusion not to use steel sleepers. I don't know why they changed their mind.

President.—If it is a case of cast iron sleepers . . . . . .

Mr. Peterson.—We wouldn't ask for protection then. Owing to the use of Indian pig iron for the manufacture of these cast iron sleepers, they can be supplied at a much lower rate than they can be imported.

Mr. Mathias.—What would be the cost?

Mr. Peterson.—Our all in cost would be Rs. 30.

Mr. Mather.—Do these prices Rs. 84—68 include the price of tie bars and cotters?

Mr. Alexander.—Rs. 84 is with tie bar.

Mr. Peterson.—As regards sleepers, under the contract, we might be called upon to supply 25,000 to 30,000 tons of sleepers at that price.

President.—I just want to draw your attention to this question of protection of rails and sleepers. Take your costs for 1926-27 as you have given them in your estimate (supplementary Statement No. 46). It is Rs. 79 for rails. Calculate on that basis your fair selling price and compare it with £7-5-0 f.o.b.

Mr. Peterson.—If we compete against England, there is not very much in it. If we are competing with England when she is competing against the Continent, it is quite a different matter.

President.—On the basis of £7-5-0, it would come to Rs. 124, inclusive of freight, landing charges and duty.

Mr. Peterson.—Yes.

President.—Take your Rs. 79 and add your overhead and profit.

Mr. Peterson.—That is what has not happened. We have to supply rails at Rs. 105. Presumably the sleeper price would be as low.

President.—That is a different point.

Mr. Peterson.—If we get that price, there is not much in it.

President.—Let consider sleepers now. The position as regards sleepers is even better on the present prices.

Mr. Peterson.—Our cost is not so low as the rail cost.

President.—Quite. But it will go down. If it is a question of choosing between the cast iron sleepers and steel sleepers, it doesn't matter to you. You may be able to sell your cast iron sleepers if they don't take your steel sleepers.

Mr. Peterson.—We might do that.

President.—In that case no question of protection can arise.

Mr. Peterson.—There is no question of protection on cast iron sleepers.

President.—Nor on steel sleepers on the prices recently mentioned by the Railway Board. If you made steel sleepers more expensive, they might use cast iron sleepers.

Mr. Peterson.—If we make cast iron sleepers. The only trouble is that these railways have got contracts by which they can compel us to deliver steel sleepers.

President.—It might be to your advantage if they did so.

Mr. Mather.—If a duty were put on steel sleepers, it would not raise your price under the contract.

Mr. Peterson.—It would have to be a bounty. I don't think there is any risk in putting on a bounty. If they don't want steel sleepers at that price, they won't have them at all.

President.—Why should there be a bounty at all?

Mr. Peterson.—Our present estimated cost is Rs. 85 and the price is Rs. 123. The margin is Rs. 38.

President.—That doesn't compare so badly. It is not a finished article such as rails. I am just trying to explain to you how the position arises. If they compel you to deliver at this price, you won't find yourself in an unfavourable position.

Mr. Peterson.—I don't think that they would go in for pressed steel sleepers. I would like to point out that sleepers go through two processes after the flow whereas rails only go through one. They are a more finished article.

President.—They might go in for cast iron or wooden sleepers. It is not cheap for every railway to use wooden sleepers.

Mr. Peterson.—They seem to change their minds so often. I don't know what they are going to do. I expect it is a question of price.

Small Bars and Rods.

Mr. Mather.—You have seen that there has been a customs ruling about small rods and small bars which appears to have the effect of exempting round bars and rods only from the duty. I take it you would have no objection if we proposed to exclude squares under ½".

Mr. Peterson.—We are not likely to roll any section under ½".

Yield of Finished Steel.

Mr. Mather.—I notice in your supplementary Statement No. 46 that the yield of finished steel from the ingots for 1926-27 works out to about 71·2 per cent. and 10 years later to 71·8 per cent. Do you think it would be possible to increase that yield to 74 per cent.?

Mr. Alexander.—No, I don't, not for sometime.

Mr. Mather.—You don't feel safe in estimating.

Mr. Alexander.—No. I realise that at home they got up to 74 per cent. or even 76 per cent. It would be expecting too much to get that here with the Indian labour that we have until they are better trained and become more efficient.

Mr. Mather.—I think you would probably realise the importance of going as far as possible in that direction, because I find that if you take the average value of the finished steel as Rs. 100 a ton and if you increase the yield from 71·8 to 73 per cent., it would save you Rs. 6 lakhs a year.

Mr. Alexander.—Yes.

Mr. Mather.—At least a rupee per ton of product if you save one per cent. of the wastage.

Mr. Alexander.—Yes, but I can't promise that we can get to 73 and 74 per cent. for sometime yet.

Mr. Mather.—You have got your mind on that and you are doing your best, I have no doubt.

Mr. Alexander.—Yes.

Fuel Consumption.

Mr. Mather.—I have been making certain calculations in connection with the total fuel consumption in the works and the possibility of improving on it by a better use of the blast furnace gas and the coke oven gas which, if they were used to the full, would diminish the amount of coal required to be brought in. I would be glad if you would give me one or two items of additional information which would enable me to be a little more certain about my final result. Can you tell me what the total amount of electric power generated is?

Mr. Alexander.—Between 20 to 22,000 K.W.H.

Mr. Mather.—Day and night for 7 days a week?

Mr. Alexander.—For 6 days a week. It would be better if I give you a statement regarding electric power generated.

Mr. Mather.—That would be very useful. In the exhibit statement that part is left blank.

Mr. Alexander.—In June it was 11,800,000 K.W.H. I suppose June would be a fair average.

Mr. Mather.—What is the cost per K.W.H.?

Mr. Alexander.—2.91 pies.

Mr. Mather.—I take it when your new scheme for additional generators is finally working—apart altogether from any increased efficiency of consumption of gas in boilers—there will be an increased efficiency between the fuel and the power generated.

Mr. Alexander.—Yes.

Mr. Mather.—It should not be any exaggeration to anticipate that by that time you ought to get about 17 per cent. over all efficiency.

Mr. Alexander.—I would not like to say what the figure would be.

Mr. Mather.—In preparing these plans for the rebuilding of the old open hearth furnaces towards the end of your development programme and also for the provision of new gas producers for the open hearth, have you taken into account the possibility that you might be able, by other methods of fuel economy, to make available for the open hearth furnaces enough blast furnace gas and coke oven gas to heat those furnaces?

Mr. Alexander.—I have taken into consideration the fact that we are already down to 3 tons of coal per ton of finished product and if we take into consideration the fact that the Indian coal is 10 per cent. inferior to other coals that would reduce it to 2·7 tons. I am not prepared to say that we can go far beyond that in 10 years, unless we go in for gas engines and things like that which they have in other countries where they get down to 2 tons of coal. In other words I cannot promise to do here in the next 10 years what it has taken 50 years to do in other countries.

Mr. Mather.—A change has been made a good deal earlier than that in other countries.

Mr. Alexander.—They have better organisations and people to take care of various work which we haven't. We cannot Indianise rapidly and at the same time get the great economies that other countries have got where they have been much better organised than we are.

President.—Would it mean a considerable expenditure if you had to adopt gas engines and get rid of your boilers?

Mr. Alexander.—Yes. Take the case of England and the Continent. It has taken 10 years for them to work that out. I know of one of the first gas driven blowing engines—being installed in about 1908. That was 18 years ago. I think that they must have done so on the Continent before that. It has taken over 20 years to perfect it and I won't promise that this plant can change to gas engines in another ten years. It means revolutionising the whole system.

Mr. Mather.—It has not taken 20 years in individual plants, Mr. Alexander. It has not even taken 20 years to be almost universally used in Europe.

Mr. Alexander.—My point is that I don't think that we can undertake to go from steam engines to gas engines within this length of time. There is too much else to be done and many things to be considered.

Mr. Mather.—I did not have in mind the suggestion that you should actually change from your existing steam plant to the gas engine plant, because that does involve practically the scrapping of your steam plant which is very expensive. I think that it is possible that by increasing the efficiency of your turbine plant you can make it better worth while to keep it than to scrap it.

Mr. Alexander.—That is the point.

Mr. Mather.—While that may be so, it is a matter for consideration whether, in any extension of power production which you propose to undertake, it might not be more economical to extend by putting in gas engines than by putting in additional steam plant?

Mr. Alexander.—I don't think that it would work, mixing one up with the other.

Mr. Mather.—What would be your difficulty? That mixing up of the two systems has occurred in practically all the works during the period of changing over.

Mr. Alexander.—Before we plan anything new, we must first get the best out of what we have and then we can think of going in for gas engines. We must have additional power and I want to order the new generator before the end of this year if possible. I hope to get it sanctioned so that it can be ordered before the 1st of next April if possible. We have not had time to make a study of the gas engine situation.

President.—Of course one can see that it would be very difficult for you to change over from steam to gas. You can do it either in instalments or, if you make very big profits, scrap the boiler plant and go in for the gas plant.

Mr. Alexander.—We cannot do that all at once.

President.—Can a new works starting get down to two tons of coal if they started with gas engines and everything else up to date? Would it be safe for them to assume that they could do with two tons?

Mr. Alexander.—I would not say yes to that for the reason that I don't have accurate figures. Mr. Mather must know what the best practice is in Europe. The best average practice is 2 tons. What is it on the Continent?

Mr. Mather.—It is as good as that; and better in some works.

Mr. Alexander.—I doubt if any firm starting in India could get those results. In the first place, they would have to get better results by 10 per cent. making allowance for the quality of coal.

President.—Apart from the question of coal, there are advantages in other things, *viz.*, labour, supervision and many other things.

Mr. Alexander.—I start on the assumption that we can get down to 3 tons. To get down to 2 tons, we require not only gas engines but something else. I don't think that we can get down to 2 tons in ten years. I would say for India for a new plant starting for the first few years of their operation, if they got down to 2½ tons, they would be doing very well.

President.—Would it be safe to take it at 2½ tons?

Mr. Alexander.—I would not assume anything less than that.

President.—Would the plant be more expensive to install than the steam plant?

Mr. Alexander.—I can't tell you what the relative costs of steam and gas installations are.

President.—I don't think that it would be more expensive.

Mr. Alexander.—It should not be.

President.—Do you burn any gas in the boilers?

Mr. Alexander.—All the blast furnace gas is burnt in the boilers.

Mr. Mather.—The object is to economise on the boilers and get better results.

Mr. Alexander.—Yes.

Mr. Mather.—You are proposing to rough clean all your blast furnace gas?

Mr. Alexander.—Yes. The first thing is to prepare it so that we can burn it properly.

Mr. Mather.—That, together with more efficient boiler practice and more efficient turbine practice and with your condensors and so on, should

result—when you get these improvements made—in your having a surplus of blast furnace gas.

Mr. Alexander.—I have not made allowance for that. It is quite possible that we will find that we have more blast furnace gas than we need and then we would consider the question of using the blast furnace gas to heat the coke ovens and release so much more coke oven gas to be used in the mills. It is better to use coke oven gas in the other departments than to use the blast furnace gas because the former has a much better heat value.

Mr. Mather.—I gather that your opinion is that the whole of your development programme must be spread over a considerable number of years. Your first object would be not merely to maintain the output but to get an increased output of steel, so that your operation is not interfered with to any substantial extent by any part of the new development programme.

Mr. Alexander.—Quite so.

Mr. Mather.—You feel therefore that the development programme will take a longer time to complete than it would otherwise.

Mr. Alexander.—Yes.

Mr. Mather.—I take it that you have considered carefully whether by adding to your staff temporarily you could expedite it by a year or two without interfering at all with your operations.

Mr. Alexander.—We expect to increase the staff to take care of the equipment we have. We cannot go beyond that. We can staff our foundry with so many people and we can staff the machine shops. It is the shop work that is the neck of the bottle.

Mr. Mather.—As far as organising the scheme is concerned, it can be done ahead.

Mr. Alexander.—Yes, we are looking 12 months' ahead.

Cost of Rolls.

Mr. Mather.—On looking through these cost sheets given for 1925-26 on pages 84 to 92 of the blue book I notice that if I multiplied the charge for rolls by the output in each of the mills and then divided the total expenditure on rolls by the finished products, it works out to about Rs. 4 per ton of finished product. Can you tell me whether your actual expenditure is as high as that?

Mr. Alexander.—Yes.

Mr. Mather.—It seems to me to be a high figure. I was wondering whether on these figures you had in that year been accumulating some reserve in your rolls?

Mr. Alexander.—It is high—nearly double what it should be.

Mr. Mather.—Can you say why it should be so high as that. It is obvious that in so far as you use the imported roll, the roll is going to cost you more than it would in Europe.

Mr. Alexander.—The whole thing is the price of imported rolls and the short life of our own rolls.

Mr. Mather.—Perhaps 20 to 25 per cent. would be a reasonable addition to the total charges for freight and duty.

Mr. Alexander.—30 per cent.

Mr. Mather.—I accept for the sake of argument that the imported roll costs you 30 per cent. more. You are spending so much—very nearly double—on the rolls per ton of output—and the other thing is the short life of your own rolls—that it seems to me that it is uneconomical for you to make the rolls.

Mr. Alexander.—It is uneconomical for us to make our own rolls. The life of our own rolls is not to be compared with the life of the rolls that

we buy. The short life of all rolls is partly due to the carelessness and inexperience of our operators.

Mr. Mather.—That introduces a third factor. In addition to the price of the imported rolls, and the short life of your own rolls, comes the carelessness of the operators?

Mr. Alexander.—Yes.

Mr. Mather.—Has there been any improvement in the last few years?

Mr. Alexander.—Decided improvement.

Mr. Mather.—Do you think that it is likely to continue?

Mr. Alexander.—Yes.

Mr. Mather.—If we take at the present moment your roll cost is nearly double of what it is in other countries, do you think that you may be able to reduce that excess of 50 per cent. of your roll cost?

Mr. Alexander.—Not for some time on account of the breakages.

Mr. Mather.—Do you expect that to remain?

Mr. Alexander.—I would say that we could reduce the cost by 50 per cent. in a few years time. We have allowed Rs. 4 lakhs for an experimental plant for making our own rolls.

Gas Credits.

Mr. Mather.—Can you tell me the basis on which you make your gas credits.

Mr. Alexander.—Guess-work.

Mr. Mather.—On page 82 of the Blue Book you give us the cost of conversion of Bessemer coverter blown-metal. There is no entry in the statement for any of the three years for power.

Mr. Alexander.—I think that it is included in 'service expense'. On the cost sheet it is under electric light and power.

Complaints about Rails and D. Steel.

President.—There is only one other point and that is about the complaints made against your rails. We asked the Controller of Stores to enquire into the matter. We received his report only this morning, and I am afraid this matter will have to stand over until we meet again.

Mr. Peterson.—If you will send it to us we will send you a written answer.

President.—There is also another point. You supplied certain steel to the Angus Engineering Works for making steel forgings for the Peninsular Locomotive Company?

Mr. Peterson.—Yes.

President.—The whole of the material was very unsatisfactory from their point of view.

Mr. Alexander.—I explained to the Angus Company, to the Peninsular Locomotive Company and also the Government the cause of the trouble and what we were going to do to remedy it, and we replaced the steel that was found defective.

President.—Will you please explain how the defects arose?

Mr. Alexander.—The complaints were about certain D class steel that we had never made before and we did not take sufficient discard from the top of the ingots with the result that we got some piped steel in the bars which were sold.

President.—That was not noticed in the works?

Mr. Alexander.—No. We could not see it.

President.—Was not that material tested by the Metallurgical Inspector?

Mr. Alexander.—Yes. He might have got a proportion of steel that had no pipe in it. It was only a small proportion of the order, and we replaced them.

Mr. Mather.—A part of their complaint was that they originally asked that the steel should be supplied either subject to specification or subject to special test and that you declined to accept the order on those conditions, and ultimately they ordered from you under the ordinary kind of inspection. They claim that had the material been subjected to special test the defect would have been discovered before they worked on the material.

Mr. Mathias.—You say you replaced the steel. Did they accept that steel?

Mr. Peterson.—We have not heard anything about it since. It was not ordinary steel, but steel up to a special specification which we had not made before.

President.—The Controller of Stores thinks that it was due rather to some want of supervision during manufacture?

Mr. Alexander.—I admitted it to the Company.

President.—You say you have now taken steps to remedy that defect. What sort of steps?

Mr. Alexander.—Taking more discard from the blooms.

President.—Is that the only case in which that happened?

Mr. Alexander.—That is all. In this particular case I explained personally in my office to Mr. Pitkeathly and Mr. Humby and also to the Peninsular Locomotive and the Angus people what the cause of it was and what we were going to do to remedy it. We also said that we would take back all the steel that was found defective and replace it free of charge, and that they would not find any more defects in future.

Mr. Mather.—A part of their complaint was that before they realized that the steel contained that defect, they had spent a good deal of money in making it into forgings.

Mr. Peterson.—But the commercial remedy was there. I don't quite understand what point the Board want to examine.

President.—These people are asking for protection on forgings on the ground that they are going to use Indian steel. It is essential that in that case the steel should be of the proper quality. The Angus Engineering Works wanted to put in a proviso that the steel should be subjected to a test in their laboratory, and I understand that you were not willing to accept that proviso.

Mr. Peterson.—Our usual practice is that if a man wants to have anything tested, he must test it before it leaves the works. We cannot take the risk of delivering the material and then having to take it back.

President.—But this is a special product. It is railway material and fewer difficulties should be put in the way of testing this material.

Mr. Peterson.—We have the Government Inspector at Jamshedpur; he can arrange for inspection.

President.—Why should you deny the purchaser a reasonable opportunity of testing his material?

Mr. Peterson.—It is only a question of principle. The same thing happens in everything else. Our experience is that if we agree to a condition of that kind we are always faced with claims for bad material and things of that kind. All steel works in the world have the materials inspected before they leave their works.

Mr. Alexander.—That was tested in the same way as all other materials are tested by the Government Metallurgical Inspector.

President.—I do not say that as a rule you should accept a proviso like that, but in order to encourage these firms to make forgings it might be to your advantage to make an exception.

Mr. Peterson.—In the case of a really first class firm it is contrary to the usual practice. They probably would not agree to that themselves, when customers are buying forgings from them.

Mr. Alexander.—We have had instances where our steel was shipped away and people who were using it did not give the proper heat treatment and wanted to reject it, and we proved to them that it was the heat treatment that was the trouble.

President.—In the beginning you have got to go out of your way to get customers.

Mr. Peterson.—It is not business as business is done.

President.—In the case of a big works when it contracts to supply certain railway material, I think it is essential that that firm should be given as many guarantees as you can reasonably give.

Mr. Alexander.—I do not know what better guarantee it can have than his materials being tested by the Government Metallurgical Inspector. Railways themselves accept that.

Mr. Mather.—Am I correct in believing that it was the first time that you made this class of steel?

Mr. Alexander.—Yes.

Mr. Mather.—And this was the first batch of this class of steel that you made and you had not taken as much care as it was necessary to ensure that the quality was satisfactory.

Mr. Alexander.—You were here, I think, when we first tried to roll this steel.

Mr. Mather.—Not when this particular lot was made.

Mr. Alexander.—It may not have been the first lot made but it was when we first started making it.

President.—This happened apparently on two occasions. First of all they say in their evidence: The Peninsular Locomotive Company ordered 1,000 screw couplings along with other fittings. "They were anxious to take delivery of the screw couplings along with the other fittings. We got steel from Tatas and commenced the manufacture before we had time to get the analysis. When the report came we found that the steel was weak and full of carbon and silicon. We stopped manufacturing immediately. Then bickerings went on between the Tata Iron and Steel Company, Peninsular Locomotive Company and ourselves and the Controller of Inspection. Eventually the Peninsular Locomotive Company could not wait long and they cancelled the whole thing. We were left with all this material". Then I asked "Eventually what happened between you and the Tata Iron and Steel Company?" and their answer was "Eventually we returned the steel to Tatas and got a fresh supply from them which was also just as bad. Again there was some correspondence. I understand that the Controller of Inspection went to Tatas and examined our order. We again got the same sort of material. By this time the order had been cancelled and we had turned out material worth about Rs. 14,000". This is what they say. Eventually what happened?

Mr. Alexander.—We corrected the defect. They made no claim. They did not tell you about the consignment of British steel that they got for the same wagons and how they rejected the whole lot.

Mr. Peterson.—The real point about this was that these wagon manufacturers were anxious to apply for protection. They came to us and said "we cannot get protection unless we use Indian material; can you help us"? We said "we have never made this stuff before but we will try and do it for you". It is therefore not fair that they should come up now with these complaints.

President.—It cost them Rs. 14,000, according to their statement.

Mr. Peterson.—We had replaced the material free of charge. They made no claim on us. We have not heard anything about this at all. We have had no complaint or demand.

President.—As regards the rails, we shall go through the papers sent by the Chief Controller of Stores and if there is anything that requires an explanation we shall write to you. Apparently the Chief Controller has gone into the matter very carefully and has given us a full report of what actually took place.

Mr. Peterson.—I may say that we are always anxious to investigate any complaints from the railways so that we might put them right.

Evidence of Messrs. J. C. K. PETERSON, C.I.E., and C. A. ALEXANDER, recorded in Jamshedpur on Monday, the 20th September 1926.

Explanation of the general lines in which the further examination is to be based.

President.—This morning I don't wish to examine you so much as to explain to you the general lines on which I wish to proceed. The most important thing that we have now to do is to estimate your fair selling price in the future. Whether we take a period of seven years or ten years, it is of little importance. I think, Mr. Alexander, you will have to make a more serious attempt to estimate the costs than you have been able to do so far. You have not had time so far, I know; but if you don't attempt an estimate more seriously, we may find ourselves rather in a difficult position. If you are not able to give us an estimate which we think is fair and reasonable, we might be inclined to do what we did before and confine our recommendations to a short period. I think you would agree that that ought to be avoided if possible; or it may happen that if we find that your figures are obviously too much on the high side, then we may be inclined to cut them down too much. That also you would agree ought to be avoided. So, I want just to indicate to you the kind of method we ought to apply in arriving at the future fair selling price. For instance, in supplementary statement No. 46, where you give us a ten years estimate—we are not dealing just now with the period because that is less important—you have reduced your ingot cost from Rs. 52 to Rs. 44 and after that you simply have taken your yield as 72 per cent. and worked up the figure. You will agree that that means that you don't expect any economies whatsoever either in coal or from increased production after the ingot stage. Surely you don't expect us to accept an estimate like that. It is perfectly obvious, even apart from anything else, that if your output increases from 360,000 tons to 560,000 tons, you must expect economies beyond the ingot stage.

Mr. Alexander.—I was basing it on what we had done so far. Our average is about 360,000 tons.

President.—Take the case of the rolling mills for instance. Supposing your new rail mill rolls at present 150,000 tons and rolls afterwards 250,000 or 300,000 tons, you don't expect the cost to remain at the same level?

Mr. Alexander.—I am afraid you are relying too much on the increased tonnage bringing the cost above down. From our past experience we know that the cost above does not come down very easily. I was this morning looking up the figures of the new rail mill. The tonnage was up by 40 per cent. over anything that we have done but the cost of rails only came down by Rs. 2-8-0 per ton, 75 per cent. of the reduction in cost was in the bloom cost.

President.—My view is this—I may be quite wrong and you may correct me if I am—that if you take 360,000 tons for the sake of argument as the production this year and it goes up to 560,000 tons, the cost should come down.

Mr. Alexander.—The cost above material in the mills is not going to come down nearly so much as it has in the case of pig iron and ingots. The biggest saving is going to be up to and including ingots.

President.—Your figures do not show any saving.

Mr. Alexander.—As I said at that time, I cannot profess to estimate within five per cent.

President.—Your estimate appears to be out by much more than 5 per cent.

Mr. Alexander.—I don't think so.

President.—I am just trying to indicate to you, Mr. Alexander, that an estimate like that cannot be accepted by the Board and in that case you may compel the Board to make some estimate which may afterwards not suit you. If you simply stick to the position that no economies or no greater economies are possible beyond the ingot stage, I can tell you, so far as I am concerned that I am not prepared to accept your estimate. I simply cannot do it.

Mr. Alexander.—I look at it in a general way. We are not going to do more than the rest of the world has already done.

President.—This is an estimate which clearly requires revision. As to how you would revise it is a different matter. This is the sort of way in which I think we should like to proceed. It is quite obvious that we can't check every item.

Mr. Alexander.—It will take weeks to do it.

President.—So, I thought that we should proceed on general lines. We had better take the main heads. Take labour first. Then, take the next important item which is coal; then take the closing down of the obsolete parts of the plant; then, you see you have got a number of miscellaneous items such as tools, repairs and maintenance, contingent fund, etc. I am talking of the major items. Take those and then any economies that you may be able to make in other directions generally and any profit that you may be able to make from by-products such as benzol.

Mr. Alexander.—In my estimate I have not taken that into account.

President.—Then, we can say that your output is, say, 360,000 tons and that it would rise to 560,000 tons or whatever it is. I don't agree with your estimate of the future output. It ought to be a little more. We shall first ascertain that figure and having got it, we shall calculate total labour charges and the incidence per ton on this production. Then, we should consider whether you should have any increase under those items and for what reasons or whether the items should be cut down for some reason or other. Then, we say at the end "you will reach 560,000 tons or 600,000 tons and the incidence of these items is so much per ton." Let us start from coke onwards and then get down to the finished product. Then we say under these items there should be so much reduction or increase as the case may be. Now you are going in for many more items than before. I think that it would not be right to take an average of all steel because you have got semi finished tin bar at the one end and you have got galvanized sheets at the other end. I think that it is not a correct method to apply now. I would suggest that having got this figure, we should apply that to all these different items. In the case of sheet bars we shall probably take a smaller figure and say that that ought to be the reduction. Then, we consider your plate mill and your sheet mill to see whether there are any directions in which any economy may be possible over and above these. Do you think that that method may be followed instead of our going through every item in the cost sheets?

Mr. Peterson.—I think that it is likely to give just as accurate results.

President.—As regards labour, I can tell you that though there is no other point on which we have as yet formed any opinion, the Board does feel that it is excessive.

Mr. Alexander.—As I told you last time, we are going to bring labour down by 10 per cent. I am going to issue orders to that effect but it will take 12 months to get it done.

President.—Whether it is 10 per cent. or more we shall discuss as we go on. Your figure is 10 per cent. But at present anyhow there is another plant working, so far as pig iron is concerned, and we have got its figures I suppose you have got the same figures from them.

Mr. Alexander.—Yes, but they show that we are better on the blast furnaces and they are better on the coke ovens.

President.—You do not appear to have examined their figures sufficiently. I am just trying to point out that the comparison is not real until you bring in all the items into your figures.

Mr. Alexander.—We cannot bring all ours in. I think that it would not be fair to do so. We have a lot of subsidiary things which they have not got.

President.—I am talking of pig iron.

Mr. Alexander.—I am talking of pig iron too.

President.—If we are to apply their figures to yours, the difference is enormous. I have not separated the coke ovens and the blast furnaces. Really it is immaterial. What really matters is the labour on pig iron. You can separate the two if you like. On the whole it is better to take the two together. If, however, you insist upon separating them, I have no objection. I took the two together.

Mr. Peterson.—Are you referring to the latest figures?

President.—Yes.

Mr. Peterson.—We have not sent them on to you.

President.—We have got them from them direct. I am just trying to explain to you the figures in order that you may correct me, if I am wrong I am just giving you time to consider it. I have not made up my mind yet.

Mr. Peterson.—I was afraid you had.

President.—I have not. I told you at the beginning that the Board does feel that your labour is excessive. You yourself admit that there is room for a reduction of 10 per cent.

Mr. Alexander.—Yes.

President.—What I did was I took the total of Statements Nos. 70 and 71. Besides that, you have given us other figures which you call labour in the unproductive departments. It comes to 10,000 men, which is the total. There are some figures which deal exclusively with pig iron such as the sulphuric acid plant. Those figures must be added.

Mr. Alexander.—No. We sell acid to the Tinplate Company of India and use acid in the sheet mill.

Mr. Mather.—Take the relative proportion then.

President.—That you may separate. We can delete those figures which refer directly to the open hearth, the duplex and the rolling mills. As regards the remainder a certain percentage must be allocated to pig iron.

Mr. Alexander.—Yes, but it is very difficult to allocate.

President.—We will follow your own method in making the allocation. I understood that you allocated most of these things in proportion to the total works costs.

Mr. Alexander.—That is general expenses only.

President.—Then, suggest to me any other method that you would apply.

Mr. Alexander.—You are talking of allocating outside charges. Hitherto we have allocated only the general expenses.

President.—We have got to determine what your exact labour is in these two departments. I suggest to you that 20 per cent. would be reasonable—I am excluding steel. Twenty per cent. of the number of men, I suggest, would be reasonable to allot to these departments. We have always taken one ton of steel as being equal to two tons of pig iron. If I apply that percentage, it would be higher, would it not?

Mr. Alexander.—Yes.

President.—I should be content to apply 20 per cent.

Mr. Alexander.—I do not know.

President.—If we apply the ordinary proportion which is really one-third . . . . . .

Mr. Alexander.—That is assuming that we are not going beyond ingots. If we go on and roll our products . . . . .

President.—For that reason I said 20 per cent. which is not excessive.

Mr. Alexander.—All right.

President.—We shall add that number to whatever number you suggest as being properly employed.

Mr. Peterson.—The comparison will be with the total labour force.

President.—Yes, in the exact form in which you have given yours.

Mr. Alexander.—What is the total given there?

President.—It is 1736. What Mr. Fairhurst says is this: "Our figures are inclusive of the whole of the labour employed by the Company on its works and in a way are not too favourable to this company as a certain proportion of the shop labour which is inclusive of all our maintenance shop labour such as machine shop, smithy, foundry and pattern shop, are employed on work for our mines and in connection with the supply of castings and such to the Indian Standard Wagon Company, Limited. We have however thought it better to include the whole of our labour at the works." I attach no importance to this qualification. I will take that as the figure. They give their production—I am talking of the blast furnace—as 265,146 tons for 1925-26, and I think your production was 602,000 tons. On the basis of their figure of 1,700 for 265,146 tons, I get a figure of something like 3,800—that is what you ought to have for a production of 602,000 tons. Instead of that you have got 7,000 men; that is a difference of about 3,000 men.

Mr. Alexander.—You mean taking the 20 per cent. allotment?

President.—Yes.

Mr. Alexander.—We could do the same thing if we had the same plant.

President.—There is not very much difference except that you have got one old-fashioned coke oven.

Mr. Alexander.—The blast furnaces are all right if you take C. and D.

President.—I agree that the Koppers is a really more expensive unit, but if we take your C. and D. blast furnaces assigning the remainder of the men to the other blast furnaces and coke ovens, the number becomes extravagantly high. You must shut them down if this is the difference between the two sets of blast furnaces.

Mr. Peterson.—Did they give you their actual costs?

President.—We have seen it, but it is confidential.

Mr. Mather.—At any rate as far as labour is concerned Mr. Fairhurst has given the tonnage per head per annum, and the wages per head per annum.

President.—That is really the most important thing because we have got some figure to compare with yours, and if you say that some adjustments are necessary, and we are satisfied, we shall certainly make them.

Mr. Alexander.—The point I wanted to make clear is that if you have a coke ovens plant and blast furnace only, when you go on to steel and on to the rolling mills, the proportion of outside labour gradually increases, especially as we have to do our own repair works.

President.—They do it too.

Mr. Alexander.—They do not do structural and other work as we do.

President.—I am talking of the pig iron department.

Mr. Alexander.—So am I. Mr. Fairhurst is occasionally writing to me to do work for him for which they are not equipped. In our case we do it ourselves.

President.—I will come to that presently. As to whether it is more economical for you to make things or to import them—apart from repairs—you have got to show by actual tests that what you are making costs you less than if you had to import it. We shall deal with that question separately. First of all we shall take the possible reduction under each head and at the same time we shall consider as we go along whether any increase would be necessary under any of these heads when the output increases. As regards reductions, the old mills will be all scrapped before the end of the period. Then we shall see how much can be saved in point of labour and so on by that fact. As regards increases, you stated the last time that you would require an increase

of 20 per cent. on labour after a reduction of 10 per cent. As far as I can see I do not think I can agree with you on that point.

Mr. Peterson.—Are you dealing in terms of number?

President.—Yes. You have got far too many heads and we shall have to cut off some of them at once! On that point my mind is quite clear.

Mr. Peterson.—I still think that the cost is really the important thing.

President.—We have first of all got to see whether you have far too many men or not.

Mr. Peterson.—I think cost is the most important thing as compared to other countries, and not the question of the actual number employed.

President.—If you are able to satisfy me that the cost per ton is lower than in Europe, but if you compare your costs with America, I shall not be convinced, I can tell you, Mr. Alexander, that American costs are no indication whatsoever of what the costs are in other countries. The relative values are quite different in America from other countries.

Mr. Peterson.—On this question of reduction of labour you can take our total wage bill.

President.—That we shall do when we come to the results at the end. But if you are asking for any increase in labour as you go along I should expect you to substantiate your claim at all important stages.

Mr. Peterson.—The probable cost of labour per ton will be entirely different. I think for instance any calculation at present of the number of men is likely to be . . . .

President.—We shall assume that wages remain where they are and that the other conditions will also remain the same.

Mr. Peterson.—I don't think the assumption will be correct.

President.—But all estimates must be based on certain assumptions. If assumptions do not substantially hold good the estimate goes. We are discussing the estimates on the assumption that the conditions hold good.

Mr. Peterson.—The only point I want to make is this, that the possible reduction in the number of labour employed and the consequent possible reduction in the costs is, I think, trivial as compared with the possible rise in the wages of labour throughout the country.

President.—That we shall consider if it becomes necessary to do so.

Mr. Peterson.—I am suggesting to you that, that is really the most important point.

President.—Do not mix up issues, Mr. Peterson. Let us clear certain points first and then you can put in your qualifications, your reserves or whatever it may be. If any new units come into operation and if there is not sufficient reserve already in your present labour force, then you may say you want an increase. But if no new units come into operation and the old units are being used to get a larger production, then I do not think your argument that you require an increase of 20 per cent. is fair.

Mr. Alexander.—When I gave you that figure I overlooked one thing and that was the question of shutting down the old mills.

President.—I have been through the figures. In the old mills you have got 2,200 men already in addition to the percentage—10 per cent. or at whatever you like to put it—of the unproductive labour. I think the old mill would probably take about 20 per cent.

Mr. Alexander.—I could work up to 560,000 tons with the same staff that we have now.

Mr. Mather.—That is your present modification?

Mr. Alexander.—Yes, because I did not take into consideration the shutting down of the old mill. There will be very little additional plant coming in except perhaps the roughing mill and one battery of coke ovens.

President.—When we discuss this question further you will probably find that not only you may not need any increase but that you may be able to do

with less men in some places. Take for instance your open hearth producers: you have got 1280 men just now. If you get even to the duplex figures, it will be less than that. These are things which you have not taken fully into account. That is an instance where you can get a whole lot of men reduced; you will have about half the number of men in the new producers. Then I saw a lot of men handling the material; there also some reduction is possible. Then again if you get rid of some of the boilers which are very old, there is a possibility of reducing the number of men. I want you, therefore, to take into account all these points and let us have your considered opinion and show what you really can do.

Mr. Alexander.—It would take a long time to go over all the items and say what it will be in ten years and make new assumptions. It cannot be done in a day or two.

Mr. Peterson.—Mr. Alexander has already told you that he can reduce the present staff by 10 per cent. I do not think there will be much increase when the new plant does come in.

President.—Closing down the old mills is going to set free about 3,000 men. You really should not require them in any part of the plant again.

Mr. Peterson.—No, not all of them.

President.—You would not require 3,000 men.

Mr. Alexander.—If we shut down the old mills which will take time, some of them will go to the new mills which we will increase.

President.—Not very many.

Mr. Alexander.—Then we will have more heating furnaces.

President.—I may say that you have got plenty of margin for all that, if you make up your mind to do without these men when the old mills are shut down. I am not asking you to do that in a day. My point is that you have not gone into this point. I have been trying to see whether really there are any new units that will require any increase of labour. For instance there is the new Wilputte Coke Ovens. Do you contemplate closing down your Koppers Ovens at any time?

Mr. Alexander.—No.

President.—Then there is the third duplex. Those are two new big units. Soaking pits are a small thing.

Mr. Alexander.—Yes.

President.—You shut the old mills down and say you want so many men.

Mr. Peterson.—We cannot do it off hand.

President.—Take your own time. Where you are putting in the Morgan producers, you are putting in something new in place of the old.

Mr. Peterson.—What you want Mr. Alexander to do is to go through the list A and simply put *plus* or *minus* against each item.

President.—Yes. As far as I can see there is nothing in the list that is going to make any substantial difference.

Mr. Alexander.—Coke ovens, third duplex and the work on the new mill,—these are the three important items.

Mr. Peterson.—The coke ovens will require the largest number.

Mr. Mather.—There it would be most useful to us if you could give us an estimate of the number of men required on the basis of the reduction that you think possible after careful consideration of the comparison with the Indian Iron and Steel Company.

Mr. Alexander.—Yes.

Mr. Peterson.—The roughing mill might require more men.

Mr. Mather.—Why should it any substantial number?

Mr. Peterson.—You want us to go over list B. Take this item Chrome, Magnesite and Silica plant.

President.—It is supposed to pay for itself.

Mr. Mather.—If you put the numbers in there, you must give us the estimated saving.

Mr. Alexander.—At the same time it takes an increased staff.

Mr. Mather.—Yes. But if you give the expenditure on them, you must give us the saving.

Mr. Peterson.—I would prefer to leave that out, because it is extremely difficult to give you the saving.

President.—You have taken measures for effecting fuel economy. You take a large number of men from other departments. I can tell you as far as I can see by the figures that I have worked out—it is an attempt to understand the situation—that you can reduce your men on the pig iron and you can get rid of your men on the old mills and yet you won't require any increase in the number.

Mr. Alexander.—Not on the old mills.

President.—I mean for the increased output. I am prepared to understand your case. I am telling you the impression that is in my mind. I have been through all the departments and that is the result that I have got. I don't say it is right, but I don't think you will find I am too far wrong.

Mr. Peterson.—Let us consider it.

President.—Don't keep this idea in your head that you can't do it. Once you have that notion in your head, it affects your sub conscious thought.

Mr. Peterson.—We can give you a statement.

President.—In the case of the old mills this number of men really does not represent the number of men that they require, because you have not estimated the amount of repairs and various other requirements of that part of your plant. The economy in closing down the mill is much greater to my mind than the figures actually show. I am just telling you my impression. In their case it is not safe to go merely by the figures.

Mr. Peterson.—Which figure are you taking?

President.—I am taking the labour figure. The indirect labour to my mind is far greater and does not enter into any of the columns of the statements that you have put in. If you make allowance for that, when the new units come in and replace the old ones you will find that my calculation is not far wrong, and that you do not require men. Then I think you would apply the same principle to the other main items, such as lubrication, maintenance and repairs, rolls, relining fund and contingent fund and so on. We have asked for some figures on some of these points already. I think that you are accumulating a very big sum in the relining fund for instance.

Mr. Peterson.—We are altering it from time to time. Last year it was too big and we reduced it.

President.—You have got to scrutinize these figures now and see whether really the works costs are not being burdened unnecessarily.

Mr. Peterson.—That is to say whether the figures are not too high.

Mr. Alexander.—If we find that figures are too high, we reduce it. We have had the sad experience of the fund being not high enough.

President.—I don't want you to cut any figure to the bone except where you see the figure is obviously too high.

Mr. Peterson.—We do that every year.

President.—I should like you to go into those figures pretty carefully.

Mr. Alexander.—I see them every month.

President.—In the light of these facts that we have been discussing do you require any increase?

Mr. Peterson.—We base them on the experience of the previous years. If we find that the fund is too big, we reduce it. If we find that the fund is too little, we increase it. In the case of tools and lubricants, those are the actual expenditure.

President.—The question arises whether that expenditure ought to increase with the output. It should not necessarily be so.

Mr. Peterson.—Lubricants should remain pretty constant.

President.—You may require a little more oil, but not very much. That is the point. These four items—materials, repairs and maintenance tools, lubricants and miscellaneous stores—make a big amount. (Showed a copy of the statement to the witnesses). These are the actuals and I want you to consider whether when the output increases, you want the expenditure in the same proportion or higher proportion or smaller proportion.

Mr. Alexander.—Do you want us to give you a statement?

President.—I want you to study it. I have not seen it, but I think taking the whole thing together, there must be room for economy. This is exclusive of the exhibits.

Mr. Peterson.—Take for instance the relining fund. That is the actual cost of relining.

President.—We don't know whether it ought to go down or up.

Mr. Alexander.—What do you want us to do besides study?

President.—Add Profit by the study and bring down your works cost. This is the principle I am following. According to my estimate, say, in 1927-28 your output of finished steel will probably be 425,000 tons—I think you have under-estimated—without bringing any new units into operation. My view is that up to this stage there should not be any substantial increase under any of these heads, because there is nothing new coming in. Then having reached that stage, the new units begin to come into operation and you can say the new units may require something more, but the old units will still be working and then you will have to establish a case for an increase in the old units leading to more production.

Mr. Peterson.—You want us really to give in total expenditure instead of ton cost.

President.—I don't understand the ton cost.

Mr. Peterson.—It is the same thing done in another way.

President.—I want the calculation in round figures. I don't want meticulous calculation.

Mr. Alexander.—I cannot do it in a hurry.

President.—We have got to submit our report by the 15th October, and we have not written it.

Mr. Peterson.—We have always been asked to give figures on the basis of cost per ton.

President.—It does not give me a very good idea. It is just as well to look at the total in rupees sometimes. When you tell the shareholders you have reduced your cost per ton by Re. 1, they don't understand, but if you tell them that you have saved Rs. 6 lakhs, they understand it better. I cannot give you more time than the end of this week.

Mr. Alexander.—The estimate cannot be accurate then.

President.—I have been doing this since yesterday and I have been doing other things besides. You will get some such figure as this—a crore of rupees—and it works out at about Rs. 25 a ton.

Mr. Peterson.—Do you mean the total or per ton?

President.—First of all, look at the total and say that this ought to suffice up to a stage and after that you require more.

Mr. Alexander.—I have got to go through each department.

President.—There is one other thing I should like you to consider about the 1925-26 figures. As regards stores and imported materials, for instance, probably you would have some stores which were imported when the exchange was low.

Mr. Alexander.—Yes.

President.—Supposing you got the full benefit of the exchange, there might be a reduction, but I don't think that you had the full benefit of the exchange in 1925-26. You have been carrying very large quantities of stocks, haven't you?

Mr. Alexander.—Yes. I have put the Accounts Departments on that to-day.

President.—I am not trying to get from you information so accurate that you can swear to it in a court of law. I am working myself as a lay man just to see in what direction some economy may be possible.

Mr. Alexander.—You cannot see my point. I have to go through each and every department and make new estimates. I also have to go through all the exhibits and estimate.

President.—Take your cost sheet figures.

Mr. Alexander.—The exhibits are charged to the costs and you want the total. I must go back to where it appears.

President.—You are an experienced man.

Mr. Alexander.—I cannot undertake to do it accurately in such a short time.

President.—What are we to do? We are working against time, aren't we? Can we say to the Government of India that Mr. Alexander wants three months and that we must consequently postpone the submission of our report?

Mr. Alexander.—All I can do is to give a guess. It may be too high or it may be too low.

Mr. Mathias.—To be accurate how long would you take?

Mr. Alexander.—I couldn't tell you off hand. I have no one to do this in such a short time. That is the trouble. We will give you an estimate on Saturday.

Mr. Mather.—In the supplementary statement No. 56 showing the costs for 1921-22 and 1925-26, stores have only gone down from Rs. 18·23 per ton in 1921-22 to Rs. 17·59 in 1925-26. This is extraordinarily small when one considers both your increased output and the rupee fall in the prices of stores. There may be a greater real saving. Probably Mr. Alexander has not had the time to go through the figures.

Mr. Alexander.—That has to be analysed.

President.—This enquiry is important from everybody's point of view.

Mr. Alexander.—My only point is that I cannot do it accurately within this short time.

Mr. Mather.—The whole idea of putting in a new plant is to reduce the cost and not to increase it.

Mr. Peterson.—I would point out that you are comparing two totally different things. In 1921-22 the sheet mill was not operating. A large proportion of this expenditure in 1925-26 will be spelter. No spelter was bought in 1921-22. That is the kind of thing that enters here and vitiates such comparisons.

Mr. Alexander.—In addition to spelter, we came in with a new plant which had to be equipped with spares. We have recently ordered Rs. 6 or 7 lakhs worth of spares just to keep up the new mills.

President.—For that reason, I am taking the cost sheets.

Mr. Alexander.—We charge them to the mills as they come.

President.—Even if you don't use them?

Mr. Alexander.—No, but we use them.

Mr. Mather.—Do they appear on the monthly cost sheets?

Mr. Alexander.—Yes.

President.—Do your best.

Mr. Alexander.—Do you want it per ton?

President.—Yes. Now, as regards coal, it is very difficult to judge what exactly would happen when you have carried out all the fuel economies. You expect to come down to 3·09 tons of coal per ton of finished steel but I think that you should come down to at least 3 tons.

Mr. Alexander.—The difference is only about 9/100.

President.—That is about one tenth of a ton. As a matter of fact a new plant ought to be able to do with 2½ tons. In your case, you should at least come down to 3 tons.

Mr. Alexander.—That is 2 per cent. off.

President.—You yourself said that the new plant may be able to do with 2½ tons.

Mr. Alexander.—Yes. We were using about 4½ tons.

Mr. Mather.—You are not using 4½ tons now?

President.—Now it is 4 tons. It was 4·16 tons before. If you calculated on a three ton basis, it might be nearer the mark. I think that you should come down to at least 3 tons. I think I have already told you that you will have to re-estimate your total production. I think that 560,000 tons is really rather lower than it should be for this reason. You have taken the duplex at 540,000 tons and you have taken the open hearth at 240,000 tons which is very low. You would increase the capacity of your open hearth furnaces when you re-build them, and I think that you ought to get at least 15 or 20 per cent. more at the end of the period.

Mr. Mathias.—In Shillong you admitted that your estimate of open hearth production was very low.

Mr. Alexander.—I said that I did not take into consideration any changes in the furnaces.

Mr. Mather.—You would not object if we put 240,000 tons up at the end of ten years.

Mr. Alexander.—To what?

President.—15 or 20 per cent. more?

Mr. Alexander.—All right.

President.—And the yield is 72 per cent.?

Mr. Alexander.—Yes

Mr. Peterson.—It is not safe to put the total production at more than 600,000 tons.

Mr. Mather.—Why?

Mr. Peterson.—It is with great difficulty that I have persuaded Mr. Alexander to put it at 560,000 tons. The higher you put the figure, the lower will be the overhead charges per ton. Consequently, the strain on the industry will be heavier.

President.—We should hardly do anything like that. Supposing we made any recommendation, we should take an average production.

Mr. Peterson.—Even so, if you spread the total overhead charges over this additional 40,000 tons, you will reduce the overhead by so much per ton. That is where the danger comes in and that is where your recommendation may come too low.

President.—After all we have got to make an estimate. If we take a figure which is a fair average, where is the risk?

Mr. Peterson.—Provided that is always kept in mind! All that I say is that if you increase our production from 560,000 tons to 600,000 tons, it is going to affect the overhead charges per ton very seriously. The overhead charges must be earned; otherwise the industry cannot continue.

Mr. Alexander.—If you calculate at 72 per cent., 540,000 tons from the duplex and 300,000 tons from the open hearth will come to a little over 600,000 tons.

President.—Supposing we put forward any scheme we must bear in mind the effect of the proposal extending over the whole period.

Mr. Peterson.—That is the point I am making. There should be some reserve.

President.—That is not a new point you are making.

Mr. Peterson.—The failure to allow for it pretty nearly destroyed the industry two years ago.

President.—Mr. Alexander, how would you find the average over the whole period? What method would you suggest? I think I calculated your average on the figures that you have given and it came to about 508,000 tons. We may make adjustments and bring it down to somewhere near that figure.

Mr. Peterson.—We dealt with that in the representation. If the Board took an exact arithmetical average it would hardly be safe to start with.

President.—You are getting very near our forecast in your production this year.

Mr. Peterson.—The question of average is, I think, very difficult: you start with a fair return at the beginning of the period and a fair return at the end, what are we going to have for the whole period?

President.—This is what was running in my mind. I take, say, 425,000 tons at the end of 1927-28: that would be about the figure. After that period you would be in a sort of transition when the new units would come into operation, and it is very difficult to estimate what the output would be whilst the new units are coming into operation. Then we get to the sixth or the seventh year when you probably begin to reach the estimated output. At one end you will have, say 400,000 tons and 600,000 tons at the other.

Mr. Peterson.—I do not think that would be safe because that decreases the protection in the initial period and increases it in the latter.

President.—That may happen.

Mr. Peterson.—I think it would better to increase it during the initial period.

President.—Supposing a new works start, it would be at a disadvantage compared to you. It is better that the new works gets the benefit of the protection; it won't if it is higher at the initial stages. You will get all the benefit for the first four or five years and when the new works comes into operation the scale becomes lower. What you are concerned with is that at all stages you ought to be able to show a reasonable balance sheet.

Mr. Peterson.—And whether it would be enough to make other people start.

President.—Of course if you are not able to declare any dividend and not able to pay any of your shareholders then no new investor will come in at all.

Mr. Peterson.—Why not take a simple arithmetical average.

President.—We have got the figures at the two ends. We have got figures at the end of the seventh year when according to you all units will be in full operation.

Mr. Alexander.—You won't have the full production. If you put it at ten years then strike an average at the end of five years; that would be all right.

President.—The idea is that if there is any period at all you must get to your full production to obtain it and the results must be obtained over a year or two to know how far the scheme has succeeded.

Mr. Peterson.—What I was suggesting was to take two-fifths instead of half.

Mr. Mather.—Why should we take an average which is lower than the average you have shown in your statement at page 26 of the blue book? You have shown your average output of finished steel from 1927-28 to 1933-34 as 508,000 tons.

President.—The difficulty is during the interval when your new units are coming into operation. About the two extremes there is no difficulty.

Mr. Alexander.—That is so.

President.—We will have to make some guess which we hope will be realized. Have you seen the letter of the 9th September that we sent you?

Mr. Peterson.—Yes. There are one or two points which we are not quite clear about. For instance you ask how the depreciation has been spent.

President.—If you have spent the money in extensions or replacements, that may be a valid charge on the depreciation but if you have used it for any other purpose it is not.

Mr. Peterson.—We spent a very large sum on extension and replacements before this depreciation was earned.

President.—We have been through your balance sheet and we have not been able to find much increase on the expenditure side on the plant and that is why we asked for this information. If you remember, in the old estimate of the value of the plant we allowed you rupees one crore, which you had not spent, as being the figure which you would require before the greater extensions were completed. You have not spent that one crore of rupees and you have not certainly spent this Rs. 180 lakhs or whatever you have earned during the last three years.

Mr. Peterson.—The figure is 1½ crores. We used it either for fresh additions to the plant or for reducing the debts which we have already incurred in financing the greater extensions, or it is in the reserve against future extensions.

President.—If you had incurred the debts before and if you had paid these debts from this depreciation fund then from our point of view it is not a good charge. We do not say that you have not spent the money. The point is that the scheme allowed you certain depreciation which you would earn and during the period the scheme has been in operation you have not spent that money.

Mr. Peterson.—We have used it to pay off money that we spent on the greater extensions. The debt on account of that is far in excess of the capital.

President.—It must go into your block value. The point is that we allowed you, from our point of view, one crore of rupees in our last estimate of the block which you have not spent.

Mr. Peterson.—We spent far more.

President.—If you can show us that you spent that one crore and also this Rs. 180 lakhs then it is all right.

Mr. Peterson.—We spent far more than you allowed us already.

President.—You spent Rs. 21 crores and we allowed you 22 crores, and brought the final total down to Rs. 15 crores (page 44 of the First Report).

Mr. Peterson.—I don't quite understand the point that we did not spend this one crore of rupees.

President.—Please see page 44 of the 1st Report, where your block stood at Rs. 21 crores. Then look at your balance sheet. Your block stood at Rs. 19 crores. We allowed you one crore too much there.

Mr. Peterson.—We were under the impression that you allowed us Rs. 6 crores too little.

Mr. Mather.—The unadjusted value of your block account was taken by the Tariff Board three years ago as Rs. 21 crores. Even now on the 31st March 1926, it is only Rs. 20¾ crores.

Mr. Peterson.—The Tariff Board never considered our balance sheet at all.

Mr. Mather.—They had the balance sheet.

Mr. Peterson.—They didn't consider the balance sheet.

President.—How do you know?

Mr. Peterson.—Right through you didn't refer to our balance sheet.

Mr. Mather.—The balance sheets and your estimate of further expenditure were studied and Rs. 21 crores were regarded as the ultimate expenditure.

Mr. Peterson.—You took the original cost from the balance sheet of the greater extensions.

Mr. Mather.—And we used your estimate of the remaining cost?

Mr. Peterson.—We gave you the final cost. Having got those figures the Tariff Board made their own valuation.

Mr. Mather.—Yes, the adjustments.

Mr. Peterson.—How do you mean adjustments? I have not seen any adjustments.

Mr. Mather.—You told us at that time that the greater extensions were going to cost you Rs. 15 crores. They had not cost you so much at that time.

President.—Expenditure in March 1923 was Rs. 12·9 crores. I am not saying anything at all about your having spent the money. The point that this Board is interested in is whether the depreciation that you had earned had been spent on the plant, I cannot find any figures.

Mr. Peterson.—You will get that from our balance sheet.

President.—That is really what I want to know. How much have you added to the value of the plant since we last reported?

Mr. Peterson.—Those are two separate questions.

President.—I havn't got the figures. I don't see what you have spent. When did you spend this Rs. 1½ crores?

Mr. Peterson.—We spent it before.

President.—We have already allowed that in the statement.

Mr. Peterson.—You are mixing up the calculation of what the value of the plant ought to be and how the finance was obtained. This question of depreciation is really a question of financing. We have financed part of the cost of the plant from the depreciation fund.

Mr. Mather.—This is subsequent to the erection.

Mr. Peterson.—Yes. We borrowed at the time.

Mr. Mather.—Then your loan figures should be down.

Mr. Peterson.—Our loans are down by considerably more than the depreciation. For instance if you want it up to 31st March, you can get it from the Imperial Bank cash loan account.

President.—Just answer that question in the letter.

Mr. Peterson.—Yes.

The next question about working capital is: "the exact amount used each year since 1923-24 and the way in which it has been financed."

That means the way in which the entire finance has been managed.

President.—That brings me to the point of working capital. Last time we went fairly fully into that question and we allowed you Rs. 6 a ton. Working capital will very largely depend on the works cost because you take the turnover. As a matter of general principle we took your works cost at Rs. 120. Now if your works cost comes down to Rs. 100 for the sake of argument, would it be unreasonable to reduce the incidence of the working capital per ton in that proportion instead of saying Rs. 3½ crores or Rs. 5 crores?

Mr. Peterson.—Last time in considering this working capital we didn't consider the liabilities of the working capital on the other side.

President.—I think you have said that this capital is adequate. Supposing the works cost goes down, your working capital must go down. I am talking of per ton and not the total.

Mr. Peterson.—Yes, it ought to go down.

President.—I said it would be a simpler method to do it by ton and reduce it in proportion to the estimate of our works cost.

Mr. Peterson.—I think it would be fair.

Mr. Mathias.—As regards the various funds, are they utilised for working capital?

Mr. Peterson.—They are used as part of the general resources of the Company.

Mr. Mather.—They might in the present circumstances of the Company. Normally they would go to reduce the loans.

Mr. Peterson.—Yes.

Mr. Mathias.—For purposes of calculation we allowed you so much working capital. This may be met partly from various funds and we must find out which funds do bear interest and which do not. Obviously if a fund bears interest, it cannot be counted against working capital for our purposes.

President.—One of the difficulties of your Company was the short term deposits.

Mr. Peterson.—We have got rid of them.

President.—If you use your provident fund for the same purpose, it would come to the same thing.

Mr. Peterson.—Yes. The position is not so dangerous as it was before because we have un-issued debentures which could be sold.

President.—They are good security for the temporary loans.

Mr. Peterson.—Yes, so long as they don't exceed them, there is no financial danger. Our present policy is to borrow against these as we hope to do without the loans. Also we can borrow at a less rate of interest than we could have to pay on the debentures.

President.—I think it would be simpler.

Mr. Mather.—At what rate can you borrow?

Mr. Peterson.—6½ per cent. at present.

President.—There is the other question about the new plant.

Mr. Peterson.—The point about the stocks of pig-iron, I couldn't follow that.

Mr. Mather.—Part of your working capital is required to finance the stocks of pig iron.

Mr. Peterson.—They are not heavy now. It is only six weeks production.

Mr. Mathias.—What reserve of pig iron should you keep always in stock in case of contingencies for manufacturing steel? Obviously you cannot carry on from hand to mouth.

Mr. Alexander.—15,000 to 20,000 tons would be quite ample.

President.—In this connection could you give me any estimate as to the average surplus of pig iron that you would have?

Mr. Alexander.—I have a statement ready for you.

Mr. Peterson.—As regards the question about the pig iron combine, shall I send you a note on that?

President.—It arises rather indirectly.

Mr. Peterson.—On what particular point do you want a note? We have not as yet made any present arrangements for next year.

President.—It is for you to tell us. The question arises in this way. You have seen a lot of correspondence in the newspapers. It only arises at present indirectly; that is to say, supposing a new works was started behind the tariff wall and if such a thing happened, what would be the result? We have got to consider that point—that is all.

Mr. Peterson.—If the Board would like an explanation regarding the statement that appeared in the papers, I could easily furnish one. The facts were not stated correctly in the papers.

President.—The same situation might arise in connection with steel.

Mr. Peterson.—The two things are entirely different. At present India is producing more pig iron than steel.

President.—The same thing might arise with steel in course of time.

Mr. Peterson.—It can be dealt with when it arises. I can put in a note explaining the whole thing. The complaint made against the pig iron combine

was that it drove out the small consumer. Any person in possession of blast furnaces could always do that. You cannot stop him from doing that.

President.—Their point was that you were selling pig iron cheaper to the foreign consumer than to the domestic consumer.

Mr. Peterson.—Yes.

President.—What they said was this. You export pig iron to Japan and they get pig iron cheaper. As far as Japan is manufacturing steel, the answer is that unless Japan gets pig iron cheaper from India than it would get from outside, the position is not changed.

Mr. Peterson.—You have supplied the answer yourself. The manufacturers of pig iron must compete with the world price of pig iron.

President.—The answer is obvious. There is one other point in connection with the fair selling price and that is the value of the block. Since we last reported, the two factors which affect the cost are the exchange and the drop in the price of steel.

Mr. Peterson.—Yes.

President.—If we are to take those two factors into account, what principle do you think that we should apply? Freight and other things will also come in. It would be very difficult to find out the effect of freight. As regards the principle, supposing we took the price of steel imported into the country at that time including the duty and everything and then we took the price of imported steel now including the duty and everything and we reduced it or increased it in proportion, do you think that it might meet the situation?

Mr. Peterson.—It is a perfectly fair way of doing it if it is necessary.

President.—I cannot think of any other way.

Mr. Peterson.—The only other way is to get the actual estimate.

President.—That is a hopeless task.

Mr. Peterson.—It is very difficult.

President.—I think that some such method as I have suggested would do.

Mr. Peterson.—Are you really considering the new plant or the old one?

President.—We took your plant at Rs. 15 crores.

Mr. Peterson.—It affects the new plant severely. The new comer may not find it so cheap when he comes to build the works.

President.—This assumes that our former estimate was correct.

Mr. Peterson.—Yes.

President.—Then, of course, we have to make an estimate and these are the two factors—the price of steel and the exchange—that I can think of which would affect the price of a plant and I cannot think of any other, so far as we are concerned.

Mr. Peterson.—The price of steel would not affect it as much as the price of machinery. I don't think that the price of machinery has fallen so much as the price of steel. The latest price at which the French Government has bought rails is Rs. 54 per ton. That is an extraordinary price.

President.—We have been trying to get the value of machinery. Take your own case.

Mr. Peterson.—Take heavy machinery of any sort.

President.—There is no machinery which is comparable with steel.

Mr. Mather.—In textile machinery there has been a fall of 30 to 40 per cent. in the last 3 years.

Mr. Peterson.—How does it compare with pre-war? We have steel coming into the country at lower than the pre-war price.

President.—In the case of the cotton industry, that industry has been in a depressed condition in Great Britain. That might affect the price. The same thing applies to steel.

Mr. Peterson.—I think that that is the only way in which you can do it. Why not take the general index figure?

Dr. Mathias.—What do you mean by "general index"?

Mr. Peterson.—I mean the wholesale price given in the "Economist."

President.—I think that there is a wholesale index price for finished products.

Mr. Peterson.—Yes. You will find that the steel price will be much the lowest.

Dr. Matthai.—Somewhere between the steel index and the general index would be correct.

Mr. Peterson.—Yes, if you could get it.

President.—That is a point we have got to consider.

Mr. Peterson.—I would like to put in this letter about the price of rails.

President.—Yes. You may also send in the quotation for steel sleepers; it is important.

Mr. Peterson.—Yes.

President.—It does seem as if this combine has really come into being with sleepers going up to £7. Of course the French Government have got various arrangements for the supply of coke and various other things which they control so that may not be a fair indication but it just shows how low prices have fallen.

Mr. Peterson.—The price of Continental bars has slightly increased lately. By about 2/6*d.*

President.—Have you received any definite information about the arrangement between Germany, France and Belgium?

Mr. Peterson.—No.

Evidence of Messrs. J. C. K. PETERSON, C. I. E., and Mr. S. K. SAWDAY, recorded at Jamshedpur on the 25th September 1926.

Prices realised for structural steel.

President.—Have you by any chance the building rules of the various corporations in India to show what specification they prescribe for structural steel?

Mr. Sawday.—They design Municipal buildings in Calcutta for their purposes when they want them. They normally require British standard. As regards private houses in Calcutta there is no insistence on British standard at all. There are certain rules as regards safety, but there is no insistence on any particular quality of steel.

Mr. Mather.—I have been examining the prices that you have given us for your sales during the first four months of this year and have compared them with the c.i.f. prices of Continental and British structural sections for the corresponding period which have been given us by various witnesses. As far as I can ascertain, the average prices quoted by witnesses, after adding landing charges and duty, would be in the neighbourhood of Rs. 133 for British and about Rs. 120—or perhaps lower—for Continental structural steel. Your figures show that the average price realized on your sales was about Rs. 136. We do not get that sort of relation with the other kinds of steel, where your average is rather below that of the British and higher than that of the Continental.

Mr. Sawday.—For heavy structural we have been competing only with British Standard material. We quote British prices in Calcutta to the engineering firms. In April, May and June we were still arguing with them about giving them at Rs. 5 less. From engineering firms we now get full British standard prices. If we quote direct to a consumer, such as a railway, we get more. If we can spare anything for up-country we get more. That tends to put up prices. To British engineering firms we have to pay freight to Calcutta Rs. 3, so we get f.o.r. works landed prices less Rs. 3, but if we quote to a railway direct we get more. We quote now because we cannot afford to discourage the merchants who stock our material. If the material is wanted up-country we can, by virtue of the freight, get a better price. For instance, the North Western Railway paid us Rs. 145 for about 4,000 tons of material. The price to the engineering firms at that time would have been Rs. 140 approximately: we get the whole Rs. 5 extra. They would rather take that 4,000 tons direct from us after having it tested by the Metallurgical Inspector than through an engineering firm and getting a certificate through them. Again, if we manage to sell to, say, the Empire Engineering Company or at Delhi for sale to Government, we get a considerably better price owing to the freight advantage. All these factors suffice to get us the Rs. 136.

Mr. Mather.—It seems possible that this is a sufficient explanation. The important thing for us to know is what the relation is going to be in future. Is something of this kind going to persist?

Freight Advantages.

Mr. Sawday.—I have worked out the freight advantages. You have to remember that when we increase our production we sell more and more in Calcutta and our average freight advantage goes down. Even heavy struc-

turals we shall have to sell more and more in Calcutta, and eventually to get a sufficient outlet we might have to drop our price, to enable the consumers to buy British standard instead of Continental. As regards heavy structurals we shall roll as much in 1927-28 as we are rolling now. In 1925-26 we sent about 25 per cent. up-country, but in 1926-27 almost all is going to the engineering firms. That is partly due to the strike. The position will be the same in 1927-28. As compared with the British standard basis the untested price is now about Rs. 20 less. Therefore we shall sell up-country in our best areas the small quantity available at about the price we get for British standard because we get the freight advantage. On British standard we have a *minus* freight advantage of Rs. 3. The average freight advantage on British prices landed will be about *minus* Rs. 2.

President.—This freight advantage applies chiefly, I take it, to heavy structurals?

Mr. Sawday.—No. It applies to all material going to the north. Heavy structural goes mainly to Calcutta. Then as regards light structurals in 1927-28 we can expect an average freight advantage on untested of Rs. 8. We shall, therefore, sell about half at the British standard price of joists *plus* Rs. 5 section extra less Rs. 3 freight disadvantage and half at the landed price of untested *plus* Rs. 8.

President.—Better let us have quantities because Rs. 8 does not convey anything.

Mr. Sawday.—About half and half—half British standard and half untested. I am working on the figures given by the General Manager of what can be produced in 1927-28.

President.—What I want to see is the quantity—how many thousand tons of heavy structurals and how many thousand tons of light structurals. If you get Rs. 8 on the whole production then it is a very large percentage.

Mr. Sawday.—You have got to get some connection between untested price and tested price next year and I am afraid that would be very confusing.

President.—Supposing you have 50,000 tons of all structurals, light and heavy, and your total production of all steel is, say, 300,000 tons; that is a sixth of the whole production. On the sixth if you get an advantage of Rs. 8, the advantage on the whole production is about Rs. 1½ in the matter of freight over the imported price. My point is different. You have not got the figures to start with. What I say is this: Your total production is 350,000 tons. If you had no freight advantage anywhere, you get Rs. 100 on that 350,000 tons. You get a freight advantage of, say, Rs. 7 a ton on 50,000 tons. That gives you Rs. 350,000 extra. You get an average price of Rs. 101 instead of Rs. 100 on the total production. What I want to know is this. What is the total advantage you get which would increase your average selling price of all steel?

Mr. Sawday.—We should sell 25,000 tons at the British standard price of joists *plus* Rs. 5 section extra and the other 25,000 tons at the landed price according to the material with freight advantage *minus* Rs. 3 the cost of putting it in Calcutta.

President.—What is the net result?

Mr. Sawday.—Rs. 11 on 25,000 tons.

President.—We shall call it Rs. 375,000.

Mr. Sawday.—Yes. We shall sell 25,000 tons at the British standard price of joists *plus* Rs. 5 for section extra less Rs. 3 which is the cost of putting in Calcutta. The other 25,000 tons we sell at the Continental price *plus* Rs. 11.

President.—That is Rs. 19 then.

Mr. Sawday.—No.

Mr. Mather.—25,000 tons is sold at the British price *minus* Rs. 2. That is Rs. 50,000 less. Another 25,000 tons is sold at the Continental price *plus* Rs. 11 a ton. Is that the position?

Mr. Sawday.—I am afraid the figure cannot be reduced to any figure such as you suggest.

Mr. Peterson.—You must take some basis.

President.—I don't know. It is for you to tell me. I want to know by how much your average realized price for all steel is increased or decreased by your getting a higher or lower rate for certain kinds of steel?

Mr. Peterson.—You want to know what is the average realized price of steel at which we sell 50,000 tons.

President.—What I want to know is this: I gave you an instance just now. Take the production as 350,000 tons and suppose you get a price of Rs. 100 all round without any adjustment for all finished steel; then you get certain advantages and disadvantages whatever it may be. Then you say in structurals you get an advantage of Rs. 5 lakhs. In rails you are at a disadvantage of Rs. 2 lakhs, so the net advantage is Rs. 3 lakhs. That is spread over 350,000 tons. Your fair average price then goes up by Re. 1 or a little less, otherwise I am not any the wiser for these various formulæ that you are talking about. This is in substance the point we have to investigate—what total advantage you get which increases your average fair selling price.

Mr. Peterson.—You don't want us to find out the average price of steel. We can take it at X. You want to know at what average price over or below that we will sell that 50,000 tons.

President.—Yes.

Mr. Peterson.—In the first place we have got to take an average price for steel. Can you tell us what price we will get for that 50,000 tons?

President.—Or give me this: By selling certain kinds of steel you realized Rs. 3¼ or Rs. 4 lakhs more than you would have done by selling all rails.

Mr. Peterson.—The difficulty I am considering is this. If we take an average price, let us say X, how far is that price either below or above the British or Continental price, otherwise we cannot work out.

President.—What I want to know is this: First we will leave alone the average price for all steel for the moment. What I want to know is how much in rupees is your nett advantage?

Mr. Peterson.—We cannot estimate exactly what the advantage is. It depends on the quantities sent to different destinations.

President.—Take the c.i.f. price that determines your fair selling price. You can say you have realised above the c.i.f. landed price duty paid so much in these particular classes of steel and then multiply it by the number of tons.

Mr. Peterson.—Shall we take it for Calcutta.

President.—Yes. Then you say you sell 50,000 tons of structurals and 10,000 tons of something else.

Mr. Peterson.—That could be easily done—what more or what less we get.

President.—We want to know the net result to the Company.

Mr. Peterson.—I will work it out.

Mr. Mather.—In that case we might have it for all the main products, plates, bars, sections and rails. Rails might introduce the biggest disadvantage.

Mr. Peterson.—We will have to work it out for every port and take an average.

President.—That is important from your point of view. As you know in the previous enquiries I think in the case of structurals and bars for instance we said you had an advantage of Rs. 15 a ton and that one-third of your production was sold in the country and then after spreading that advantage over the whole production we said that your profits fixed by us might be reduced by that amount. We want to see whether it is necessary for us now to adhere to that principle. Unless you tell us the exact nett result as far as you can ascertain it—the various advantages and disadvanges you have—it is very difficult for us to judge.

Mr. Peterson.—We have given you a list of the advantages.

Mr. Mather.—You have given the rates.

President.—You must give us the tonnage. Then as regards rails, the Burma Railways say it cost them Rs. 24 a ton from your works to Rangoon against Rs. 16 which you said was the total freight.

Mr. Sawday.—I have made a note on that. Rs. 16 was worked out on a freight of Rs. 14 less 10 per cent. charged on different rates according to the weight of each piece. If we ship very heavy pieces, we pay Rs. 27 a ton. If the pieces do not exceed 30 cwts. we pay Rs. 18 a ton and if the pieces do not exceed 2 cwts., we pay Rs. 16 per ton. It used to be Rs. 14. For rails the freight would be Rs. 18 less 10 per cent.

President.—From Calcutta?

Mr. Sawday.—Rs. 18 less 10 per cent. *plus* Rs. 5 for putting them on board the ship. The Burma Railways have always shipped through the medium of the Eastern Bengal Railway and it is possible that they have included some charges for supervision and so on.

President.—It is much better to take their figure.

Mr. Peterson.—Their figure must be more accurate than ours.

President.—I should think so.

Mr. Peterson.—Ours is based on an estimate.

President.—Then I think as regards the Madras Railways, we have no figures as far as I know.

Mr. Mather.—No.

Allegations against the Palmer Railways.

President.—Mr. Peterson, I think it will be advisable for you to read the replies that we have received from the Palmer group of railways in connection with your representation and I think it would be in your own interests if you revised your former representation in the light of those facts. It is not right that any allegations should be made by you against these companies without your being able to substantiate them.

Mr. Peterson.—Which particular allegation are you referring to?

President.—You have made various allegations. You said that they didn't make sufficient enquiries from you.

Mr. Peterson.—As a matter of fact they didn't make any enquiries.

President.—You had better read their replies and if you have any explanations to give, you can send them in. We have not got the time to examine you in detail. I think it is only fair that if you are satisfied with their explanation you should withdraw some of your allegations against the railways.

Mr. Peterson.—I can prove everything that is said in our representation. I do not think there is any statement made in our representation not proved by actual facts.

Mr. Mather.—Your representation is not confined merely to a statement of facts. It attributes certain motives.

President.—Then we have received a letter also from the Railway Board containing the replies of the North Western Railway in respect of your allegations against that railway as regards the use of structural steel.

Mr. Peterson.—I think we have already withdrawn that.

President.—Your representation has been printed about structural steel The only thing we can do is to print your letter of withdrawal as a foot-note.

Mr. Peterson.—If you wish us to reply to that, we will.

President.—If you like to do that, you can do so.

Mr. Peterson.—I think that is the best way to do it.

President.—It is a very serious allegation that you have made. The Railway Board has replied and the railways have also replied. If you withdraw your original letter to us you must write to us officially.

Mr. Peterson.—You want an official reply.

President.—Yes. Or if you want to enter into any controversy, or explain your position with reference to the replies of the Railway Board, you can do so. Then we shall deal with the whole thing.

Mr. Peterson.—I have not dealt with the replies of the Railway Board officially, but I have got a copy of the reply from the Railway Board.

President.—We can send you a copy officially if you want.

Mr. Peterson.—I just want to know which allegations you think have not been proved.

Mr. Mather.—On page 35 you say: " Messrs. Rendel Palmer and Tritton definitely stated that rails made by the Basic Bessemer Process will not be considered. The only object of this is to exclude rails of Indian manufacture " that is an allegation which has not been proved.

Mr. Peterson.—I said to the Board at Shillong that the Steel Company would accept the opinion of Mr. Mather as to whether the specification did actually exclude rails of Indian manufacture or not.

Mr. Mathias.—I understood that there was a difference of opinion between yourself and the General Manager.

Mr. Peterson.—Our London Office especially referred to this and reported to us. It is a question of what is meant by the Basic Bessemer Process.

Mr. Mather.—My own opinion is definite that it does not exclude Indian rails and I go further—I think the matter is not finished even there—and say even if it did, it would not at all prove that the only object of this specification is to exclude rails of Indian manufacture. You must be aware that Messrs. Rendel Palmer and Tritton have been calling for tenders on the Continent where Basic Bessemer rails are very commonly made.

Mr. Peterson.—I am only looking at it from the Indian point of view.

Mr. Mather.—When you say that the Rendel, Palmer, Tritton's only object is to exclude rails of Indian manufacture, you must look at it from their point of view. If you are attributing a motive to them, you must take into account the circumstances of the case.

Mr. Peterson.—I am quite willing to admit that we may be wrong. thought it was intended to exclude Indian rails at that time.

Dr. Matthai.—I understood that you definitely withdrew that allegation.

Mr. Peterson.—Yes, we have already made an official statement on that point. There is no statement in this so far as I know which cannot be proved by reference to actual documents.

Mr. Mather.—Can you prove the statement made at the top of page 35? " Our quotations have from time to time merely been used by them in order to obtain lower prices."

Mr. Peterson.—I should say so.

Mr. Mather.—You have no evidence.

Mr. Peterson.—I have got evidence. On three separate occasions we were asked to quote. The only result was a further call for tenders to obtain a lower price. That is the only evidence I have. I can say publicly that at the instance of Mr. Sim, the Financial Commissioner to the Railway Board, I went into this question at a conference of the Agents and engineers of all the railways at Simla. During that conference Mr. Sim asked me to discuss the matter in a private room and said: " Will you tell me your lowest possible price and I think the Railway Board can guarantee the orders." I said: " I don't think you can, but if you will guarantee that the Railway Board will do their best to get us the order, I will offer our lowest price." Mr. Sim said that Rs. 115 would be a fair price and I agreed to that. About a month later I heard from the Railway Board by telegram that the Palmer Railways were going to call for long term tenders. And they again asked us what was the lowest price we could quote to induce them not to do so. I conclude that the Railway Board has not succeeded in doing what they said. At that time

they were themselves paying Rs. 130 per ton. We then quoted Rs. 105. That was what actually happened. I don't think Mr. Sim would contradict that.

Mr. Mather.—If you compared the low prices obtained from England with the prices at which Continental manufacturers were selling basic open hearth rails, you would find that they were influenced more by Continental prices than by your prices.

Mr. Peterson.—That question has already been referred to in the Legislative Assembly. I think it was Pandit Motilal Nehru who said that whenever there was competition between India and England, we are always told that the English materials are better, but whenever English materials ceased to compete and there is competition between Continental and Indian materials, we are told that the Continental materials are cheaper. That is exactly what has been happening.

President.—I will draw your attention to one statement made on page 35 of your representation. " We don't think, however, that the industry in this country has been treated fairly by the Railway concerned in connection with these orders. It seems obvious that our quotations have from time to time merely been used by them in order to obtain lower prices in England from English manufacturers. Simultaneous tenders have not been called for nor have the Railways concerned made any effort to assist us in the matter." This has been denied by two of the Railways.

Mr. Peterson.—Which?

President.—The Burma Railways and the Madras and Southern Mahratta Railway.

President.—I will have to read out to you what the Burma Railways say:—" In October last year, owing to Messrs. Tatas inability to supply all our requirements for 1925-26, the Board placed orders for rails in England and Germany, at rates that worked out so considerably lower than that of Rs. 115 per ton f.o.r. Tatanagar, offered by Messrs. Tata through the Railway Board for our 1926-27 requirements, that the Board were unable to accept the latter. Subsequently the Board received from you under cover of your No. 1431 of the 7th December 1925, a copy of a note by the Railway Board in which it was suggested that as Messrs. Tatas capacity would fall short of the total requirements of Indian Railways in 1926-27 and 1927-28 by about 21,000 and 36,000 tons respectively, the Burma Railways should drop out for these two years' supply. Subsequently, however, the price of British and Continental rails fell so considerably that there was a possibility of some of the Railways indicated by the Railway Board, obtaining their rails from other sources than Tatas, in which case the capacity of the latter might be equal to supplying the Burma Railways' immediate requirements. In the altered circumstances, the Directors thought it advisable not to exclude Tatas, as had been recommended by the Railway Board, and consequently as a first step towards inviting tenders by public advertisement, Tatas' representatives in London was interviewed and with him a date was fixed for opening the tenders which he was satisfied would allow ample time for obtaining a tender from India."

Mr. Peterson.—My objection is that it is not a simultaneous tender called for in India.

President.—You had priority over the British and other manufacturers in this case. The Burma Railways Company's Board in London first consulted your representative there. Let me read now what they say further. " It will thus be seen that the Board made special efforts to ensure Messrs. Tata being able to tender (as they did) simultaneously with firms in Europe and America."

Mr. Peterson.—That I object to. I don't see why tenders for materials required for in India, should not be called for in India.

President.—That is a question of policy.

Mr. Peterson.—It is precisely the policy we are objecting to.

President.—We are not going to consider any question of general policy. That has been argued for years and no decision has been come to. We are not concerned with that now.

Mr. Peterson.—We were told that tenders would be called for simultaneously in India.

President.—Then, they go on to say "There is no foundation whatever for their statement that their quotations were used in order to obtain lower prices from English makers. English and Continental prices had fallen before Tatas' rate was reduced from Rs. 115 to Rs. 105." Then, they give the prices. Your price came to Rs. 124, c.i.f. Rangoon.

Mr. Peterson.—The Railway Board told me "give the lowest price and we will accept it" and I said "my lowest price is so much." I subsequently found that that price was simply ignored. No notice of that was taken and fresh tenders were called for.

President.—I do not think you have established that point.

Mr. Peterson.—That was what actually happened. I don't know what they say now.

President.—I have just read out to you what they say.

Mr. Peterson.—Probably they have it on record. I also have it on record in a note.

President.—You were not in London then.

Mr. Peterson.—I was in Simla.

President.—I am talking of the Burma Railways tender.

Mr. Peterson.—The Burma Railways eventually called for tenders in the usual way in England and we tendered.

President.—And then your tender was not low enough. What is your complaint? If you say that they should not call for tenders at all, that is a different proposition. If they call for tenders and if your tender does not happen to be lower than other tenders, there is nothing to complain about. You should take a more reasonable attitude. You should not make allegations without being able to prove them.

Mr. Peterson.—I have not made any allegation.

President.—Here is one that I read out to you. It is not for me to say anything that you don't wish to say yourself. But it is my duty to point out that it is better that a controversy should not be carried on in such a way about a fact which you did not know. You should be in a position either to substantiate what you said or you should withdraw. I don't say anything else. The Board cannot summarily say that what you say is true and that what the railways say is not true. That is what you ask us to do. The reply of the Madras and Southern Mahratta Railway is more or less to the same effect. They say that their experience had been that you had not been able to fulfil your orders.

Mr. Peterson.—That was before the new rail mill was put into operation.

President.—In 1925-26 you took an order for 15,872 tons and you supplied only 15,468 tons. Every year there was a shortage.

Mr. Peterson.—That was because of the old plant. We can supply now.

President.—If the Railway Company goes by its own previous experience, you cannot complain. You will also do the same thing.

Mr. Peterson.—The only point I am making is that the Indian Railways should buy Indian rails. That is the only point that is made in this representation.

President.—The Railways say two things. First of all they say that their experience had been that in the past you had not been able to supply the full quantity contracted for.

Mr. Peterson.—We meet that point by saying that our rail capacity has increased.

President.—I want to know what you yourself would do, if you had to buy from a manufacturer who had disappointed you. Would you go on enquiring as to what he had done?

Mr. Peterson.—I should certainly say that in any other country in the world except India the consumer would go and enquire from his own home works whether he could get his supplies.

President.—I am asking you what you would do.

Mr. Peterson.—That is what I would do personally. I would enquire " can you not now make these rails."

President.—If I dealt with a man who had been disappointing me for 5 or 6 years, I would say to him " I am tired of you " and I will look for somewhere where I can be better attended to.

Mr. Peterson.—In the past seven years nobody could hope to be better attended to than the Palmer Railways. I have nothing more to say.

President.—The next thing they say is that they find your rails more expensive. Are we going to dismiss that as a frivolous ground?

Mr. Peterson.—More expensive in what way? More expensive in price?

President.—Yes. Your tender has not been lower than the foreign tender. What are we to say? We are not discussing the general question. We are dealing with the particular points raised.

Mr. Peterson.—The reason why the foreign rails are cheaper is this. It was due to the Board's mistake in the original Report. The Board did not realise that the contracts would expire in the third year. The result was that rails were left unprotected. Therefore naturally our price has not been as low as the price charged by other works. There is no protection. The Steel Company can hardly be blamed for that.

President.—How can you blame the railways for that? Supposing your contention was correct, how would you blame the railways? Really it is not fair.

Mr. Peterson.—That was what happened.

President.—I do not think you have met those two points.

Mr. Peterson.—You might imagine the position of the Steel Company which was this. In 1925 knowing that this further enquiry would come along and knowing that the success of the industry depended entirely on its being able to supply rails to the Indian Railways, they were faced with a statement that the Palmer Railways were contemplating a five year contract for rails from foreign sources. If that is the method by which the Indian railways propose to support a national industry, you cannot expect the industry to be successful.

President.—The contract was not made.

Mr. Peterson.—It was due to the influence of the Government of India and the Railway Board that it was not made. Unless Government who practically own the Railways are prepared to protect the industry against that sort of policy, it is impossible to carry it on.

President.—If we were satisfied that what you said was correct and that the railways deliberately attempted to enter into a long term contract, we might have something to say; on the other hand, if we were satisfied that your allegations were not justified, we might have something to say. It is for you to consider whether we ought to go into this question or not.

Use of Tata's structural sections by the railways.

Mr. Peterson.—I would like you to ask Mr. Sawday on the point about sections.

Mr. Sawday.—In the previous note, we made one general allegation that the Railways did not pay sufficient attention to our sections and did not use our sections when they could. We also made one specific remark about the

North Western Railway which we were not in a position to prove and which we withdrew. I remember Mr. Peterson saying at the last meeting that we ask for is when it is possible for the railways to design a bridge using either sections which can be rolled in the country or which cannot be rolled here, definite orders should be issued to the effect that sections which can be rolled in the country shall be used. You have circulated all the railways through the Railway Board. Some of them have replied that they are ignorant as to what sections we do roll. In 1920, we got out a printed illustrated catalogue. That was sent to all the railways and was distributed very widely. When we got out a section list, we also sent that round. Then again, in September last, I wrote a letter to all the railways. I wrote specifically to the North Western Railway drawing their attention to the fact that so many sections were included in the Jhelum bridge which we could not roll and pointing out that this meant additional expenditure and also the fact that we had discussed the subject with the Railway Board. The Railway Board asked us to send our section list round to all the railways and we wrote to all the Chief Engineers of the various railways on the 27th September, 1925, as follows:—

"DEAR SIR,

We were recently asked and had to refuse to tender for material for a big bridge required by a Railway because only 2 or 3 out of the 14 or 15 sections specified in the design could be rolled by us. The other sections were obtainable only from England and even then were so unusual that to obtain them at all must have involved the Railway concerned in considerable extra cost.

This has raised the question as to whether Railways have sufficiently full information as to what we can roll. I am therefore sending you copies of our section list and would be much obliged if you would instruct your designing staff to keep these lists in mind and to use them when drawing up designs. These sections are what we have found are most often required and if Railways will work on them, Engineering firms will be able to get their requirements more easily.

Dr. Matthai.—When was that?

Mr. Sawday.—Last September.

President.—To what railways did you write?

Mr. Sawday.—To all the railways.

President.—You are raising an important question of principle. If the State wishes to encourage an industry, then it should see that its own departments used the products of that industry as much as possible.

Mr. Sawday.—Yes.

President.—It raises at the same time a very complicated engineering question.

Mr. Sawday.—I am only dealing with the point raised in their replies that they have not got the information. I have given information to every one of them.

Mr. Mathias.—Do you supply the structurals direct to the railways or are you speaking of your supplies to the engineering firms?

Mr. Sawday.—All through the engineering firms. The only railways which do much structural work on their own are the North Western Railway and the Burma Railways.

Mr. Mathias.—The work on the Jhelum bridge was a large undertaking.

Mr. Sawday.—That order went to Braithwaite's I believe. The North Western Railway in addition to fabricating themselves place many orders for structurals with engineering firms. Further dealing with the point that they do not know what we roll, Messrs. Jessop and Company circulate a metal list every two months. Every railway engineer gets a copy of it. It includes the list of sections that we roll. Therefore we can safely say that there is no excuse for their saying that they do not know what sections we do roll.

Dr. Matthai.—What precisely is that you have there?

Mr. Sawday.—It is Jessop and Company's circular.

Dr. Matthai.—It contains a list of your sections.

Mr. Sawday.—Yes, it also contains British sections. You wanted further figures showing how much was the total tonnage, how much we could roll, how much we could not roll, on the list I submitted before. The total tonnage on that list was 1,200 tons. Of that we could not roll 370 tons, some of them being big beams. We cannot certainly grumble about these. The only other section which it is clear we ought to roll is probably 3½" angles. This week I again took up these replies with all the engineering firms in Calcutta—they don't want to be dragged into the controversy—and they said that any of them could design a footbridge suitable for any purpose already given on sections without difficulty.

Mr. Mathias.—That will be for a footbridge.

Mr. Sawday.—Most of the specifications or that list were for footbridges.

Mr. Mathias.—Not the Jhelum bridge?

Mr. Sawday.—No. I am speaking generally now of the footbridge specifications on that list.

Mr. Mather.—It is probably correct that they can be designed, but it is not proved that they can be done economically.

Mr. Sawday.—I saw a railway engineer and asked him about this. He showed me some drawings which had been specially drawn up with a view to getting what could be had in the country. I asked him why we did not get similar designs from other railways. He said "the other railways don't trouble to revise their designs. Some of the designs are very many years old." It is obvious that if they continue to work on those designs, the same trouble must go on arising.

I will give you a peculiar case I had yesterday. One railway is asking for underframes. They are working on the designs of the Leeds Forge Company which require pressed steel plates for about 70 per cent. of the work. The pressing of the steel plate can only be done by one firm in this country. Underframes identical in size, same width same capacity, same everything, have been designed and supplied for another railway from joist sections of material entirely produced in this country from our sections. The Government railway if they so wished could get the underframes made from material manufactured entirely in this country.

Mr. Mathias.—I understood you to say that you have had no difficulty in disposing of your structurals. Is that correct?

Mr. Sawday.—We havn't but that doesn't mean that we can afford to see markets closed because railways adhere to old designs.

Mr. Peterson.—Some of our customers complain that they cannot compete with British firms importing British fabricated steel. Their greatest competitor at present is Messrs. Dorman Long and out customers complain that unless we give them heavy discount they cannot compete. We have to cut prices accordingly.

Mr. Mathias.—My point is that actually you could not supply very much more structural steel than last year.

Mr. Peterson.—For the next two or three months probably not.

Mr. Mathias.—During the next couple of years, I should say.

Mr. Peterson.—You cannot say that.

Mr. Mathias.—You are producing your structurals on your old mills at a heavy cost?

Mr. Sawday.—We have supplied most of the structurals to underframe and wagon orders. Then we took a 10,000 ton order for the Port Commissioners' sheds which we have just finished. That was somewhere round Rs. 12 below the price we should have normally got. If the ordinary good market was bigger we shall take less of these special orders.

Mr. Mathias.—At the present moment you have enough orders for structurals to meet the amount you produce but when you have got the new mills working on structurals you would be able to produce them at a very much lower price and it will then be important from your point of view for the railways to overhaul their designs so that your steel can be used.

Mr. Sawday.—The price we offer is the British standard price and is not affected by our works cost. On the other hand if the engineering firms could fill up a bridge order we get a better price. The Bengal and North-Western Railway and the Madras and Southern Mahratta Railway say they have got our section list but the latter add that we only roll three new sections and five old. The correct figures are 4 new sections and 11 old; they say that of heavy beams we roll nothing. That is correct. Channels they say we roll only two new sections and two old. The correct figures are 2 new sections and 6 old. The Central Indian Coalfields Railway Construction say they require $3'' \times 3\frac{3}{8}''$ and not $3\frac{1}{2}'' \times 3\frac{1}{2}''$. We do not roll $3\frac{1}{2}$ yet. They also say "It is for Tatas to go round to the firms and find out what they are using and try and meet the demand." This brings it the point which the President raised last time, that we should only roll sections for which there is constant demand and not roll as many sections as we can.

President.—What I said was that you could turn to some other product which from your point of view might be more remunerative.

Mr. Sawday.—Then the Bikaner State Railway say that they do not specify source of information of sections . . . . I have been unable to trace the enquiry quoted by Tatas on the list sent by you and imagine that they have been given incorrect information." I have verified the list I gave you before and see that the enquiry is from the Bikaner Railway as stated.

The Bengal Nagpur Railway say as far as they are concerned there is only one work—Footbridge at Bhatapara—and that "there are 4 sections mentioned as specified by us which they do not roll—$6'' \times 3\frac{1}{2}''$, $4'' \times 3''$, $6'' \times 3''$ and $3\frac{1}{2}'' \times 3\frac{1}{2}''$. They say that $6'' \times 3\frac{1}{2}''$ and $6'' \times 3''$ cleats were intended to be made from bent plates and not from angle. The Engineering Firms tell us that it would be very expensive to make these cleats out of bent plates. They would in practice take a $6'' \times 4''$ angle, cut down one side—a very wasteful proceeding. Then as regards $4'' \times 3''$ of which there is a total of 18′, and that is one of our main points. They say "If the successful tenderer had asked permission to use $5'' \times 3''$ it would have been granted." Our point is if $5'' \times 3''$ is suitable for their purpose why don't they ask for $5'' \times 3''$. They specify a section not rolled in the country when one rolled in the country will do. It is no satisfaction to us to know that the contractor would have got it changed. We want tenderers to know beforehand that they can use our material. Then they say "We have no list in our office, the head of our stores section cannot remember ever having received one." On ringing up the Controller of Stores I was informed that he has such a list. It would be incredible that the Stores section had it our lists we hear or have dealings with them almost daily. Then, the Jodhpur Railway say they do not have a section list. Not only do we send section lists to the State and company railways, we made special canvas of the Native State Railways and we have written to all their Chief Officers, so they have no excuse whatever to say they do not know what we do roll. The North Western Railway grumble largely about deliveries and of course deliveries until last April were bad. But since last April complaints have almost entirely stopped. Then they go on to say that "The statement that some of the sections asked for are so unusual, etc.," is not understood unless it refers to some of the material required by other railways. Without a single exception the sections shown as asked for by this railway are British standards which can be obtained from any large English firm, usually from stock and at no extra cost. The sections may be British Standard but people who order the less common sections inevitably pay more for them. I got hold of one of the firms which recently supplied such sections to the North Western Railway and they said they charged a higher price for the unusual sections wanted than they would have done for the ordinary sections used. If you ask for any section

which is not readily saleable, it is inevitable that you will have to pay extra for it. Works do not roll sections little in demand or merchants stock them without charging therefor.

There is one more point to prove that the North Western Railway does not pay much attention to our section list. I have got six telegrams here, the first of them received in August and the rest in September asking in 800 words for about 20 items none of which we can roll. If they had paid attention to the sections we roll then telegrams would not have been sent and probably the Railway would have got what they needed more easily.

Mr. Mather.—Probably there would have been a good deal less discussion on this subject had you not said in your letter of the 29th July 1926 (Supplementary statement No. 37) that "Whoever designed the Jhelum Bridge must have been determined to give Indian steel no chance."

Mr. Sawday.—We cannot prove that, we admit, and have withdrawn it.

Mr. Peterson.—But they have no excuse to say that we do not give them any information as to what we roll. We say that we do give them the information.

Dr. Matthai.—Do you publish any handbook of your own showing your sections?

Mr. Sawday.—We publish a printed section list and we are getting out a new handbook.

President.—The whole point seems to me to be this, that unless some central authority takes up this question as a whole from the engineering point of view I don't think that any solution is possible.

Mr. Peterson.—We asked the Railway Board to take it up.

President.—They must undertake an investigation of your rolling mill capacity and the sections you can roll and then they must consult the engineers as to whether, having due regard to economies, these sections can be used. You certainly cannot expect the Tariff Board to do a thing like that.

Mr. Sawday.—We do not. We don't want them to look into our rolling capacity, etc. All we want is that they should try to use sections obtainable locally. Your contention is that so far as the supply of steel from India is concerned, the railway standard specifications should be changed to suit the structurals made in India? It would take a considerable time to go through every design.

Mr. Sawday.—One railway has done it why can't the rest try? The ordinary buying of the railways is not so efficient that a saving of one per cent. in weight it is going to make very much difference.

Mr. Mather.—You cannot expect the railways to admit that it would be safe to ignore it!

President.—The position as it looks to me is this, that you claim that if this industry is to be encouraged more and more indigenous steel ought to be used?

Mr. Sawday.—Yes.

President.—For that purpose you claim first of all that some body must inquire into your rolling capacity and the various sections that you can roll. That is essential. Then, having done that they must consult the engineering departments of all the railways—one railway is not going to take a specification or design from another railway in India as you know—and go into all the designs which they usually require, and then say so much Indian steel can be used; as regards others it would not be economical to use Indian steel at all. It seems to me that this is the only thing that can reasonably meet this case; I cannot see any other, and at present would such an enquiry lead to very useful results unless your rolling mills are changed and you add new mills and are able to show that you can turn out sections and quantities suitable for the use of the railways. It may take a long time to go through all this enquiry and just now it does seem to me that such an enquiry would be premature.

Mr. Peterson.—Of course it will take years, I am afraid.

Mr. Mather.—The question is not merely limited to a consideration of the particular sections for which you have rolls or even the quantity that you can roll assuming that you gave that priority over everything else. The fact remains that you cannot supply more than a fraction of the sections required in India for various purposes.

Mr. Sawday.—The Calcutta engineering firms can supply a great deal more sections and it is clearly likely to help the railways if they use, as far as possible, sections made in the country. We do not say that they can avoid using important sections but we do say that they could use more Indian sections and ought to try to do so.

Mr. Mather.—But you cannot roll more unless you are going to cut down your production of galvanized sheets or bars. In that case other countries will come in there.

Mr. Peterson.—What about the proposed new works?

President.—We do not know whether any new steel works will be started. or what it is to do, if it is.

Mr. Peterson.—The real point we want to make clear is that if the industry is to develop in this country it is essential that large consumers such as Government and the railways should really make an effort to use Indian steel to encourage the industry; they should give preference to it wherever they can. I cannot conceive that English engineers would prefer to encourage the use of German or some other steel. That is the real point.

President.—Suppose an engineer says 'here is this bridge; I have got the design which I have used for many years; I know I can get only five sections from Tatas,' for that five you want him to reconsider his whole design and see exactly how many sections you can roll and in what quantities you can supply and ask him to prepare a new design and so on. It is not seemed to be human.

Mr. Sawday.—One big railway has done it. Why not the rest!

Mr. Peterson.—It is the declared policy of the Government of India. What I would say is this. You have answers from all the railways and they say they do not know—that we have not brought to their notice—what we roll. We show you that we have. This clearly shows what interest they take in these things. They do not even care to look into their records and see what we can roll. What we are fighting for is not our own battle: it is vital to the steel fabricators. It is much more important to them than to us and therefore you have got to consider whether in order to encourage the engineering industry working up Indian steel it is much better that they should change their designs to suit our sections.

Mr. Mathias.—I do not quite follow in what way it is important for the fabricated steel makers to obtain Indian steel because the total amount of heavy structural sections that you roll is only about 28,000 tons.

Mr. Peterson.—They cannot be protected unless they use the indigenous material, and therefore they are perpetually pressing us to give them indigenous material.

Mr. Mathias.—My point is this. The indigenous material that they can use is limited to the quantity you can produce.

Mr. Sawday.—The engineering firms are helped if they can promise rapid delivery. If some of the sections have to be imported the whole work is delayed. In any case we are enquiring this on general grounds. Indian Railways ought to try to use sections made in India.

President.—When an engineer says it is economical to use certain sections who is going to disprove his statement? You cannot find any evidence to disprove his statement if he says 'if I use 25 English and 15 Belgian sections the result would be much better than if I got 15 from here and the rest from other countries.' It is far too intricate a question for an ordinary man.

Mr. Sawday.—I may mention that the Public Works Department engineers first get out a specification of what they want and then give that design to the engineering firms.

Mr. Peterson.—We do not wish to press this point, but we have a pious hope that this sort of thing must happen eventually if you are going to have new works. You will have to change over the designs to the indigenous material.*

Freight Advantages.

President.—Will you let us have a note on the freight advantages for all the ports based on your past experience? Take your best year as regards quantities and say "this is the distribution. Out of that so much is sent to such and such a place. We have an advantage of so many rupees as compared with c.i.f. prices and so on." In the case of Burma and Madras where you have not done much business, simply give us an estimate.

Mr. Sawday.—Yes.

President.—As regards rails you have got the figure given by the Railway Board as 194,000 tons and you may work on them. The 50,000 tons for the Burma and the Madras and Southern Mahratta Railways may make a difference.

Mr. Sawday.—I work out roughly that if the freight advantage on rails is minus sir, it will wipe out advantage on other material?

President.—That is the sort of thing I want. The point is this: If you are to sell your rails as cheaply as you can afford, you must get all the orders for rails. In order to get all the orders for rails apart from any question of protection, you must be able to sell them at a price which would induce the Railways to buy them from you. That price would be the average price at which they can import them or something below. Therefore what you have to show the amount you will lose on an average over the whole production.

Mr. Sawday.—The freight disadvantage on rails will be much in excess of Rs. 6.

President.—I have not calculated it. Assuming that the demand from these other railways is a quarter of the whole demand and you get on an average Rs. 10 less for these, your average price for rails may be reduced by Rs. 3 or Rs. 4 a ton.

Mr. Sawday.—We have a freight disadvantage in the case of rails.

President.—I think you can get the actual figures really speaking. You have got all the orders except from two or three railways.

Mr. Peterson.—We have got orders from all the railways, except three, *viz.*, the Madras and Southern Mahratta Railway, the South Indian Railway and the Burma Railways.

President.—You can add those quantities that they have ordered else and say that if you had to supply these, you would have lost so much.

Mr. Sawday.—Yes, I shall let you have a note on that.

Protective duty on wide flats.

Mr. Mather.—You are aware of course that tinbar imported into India is not subject to a protective duty. Can you tell me whether a protective duty is being applied to wide flats which are very similar in their dimensions. I believe your firm occasionally rolls 8-inch flats.

Mr. Sawday.—It is being applied. It ought not to be under that ruling.

Mr. Mather.—I realize that under the ruling as it is given it would not be possible to justify the differentiation.

(* This was not given in evidence as it has happened since but it may interest the Tariff Board to know that the whole of the steel work in the Nerbudda Bridge on the G. I. P. Railway which was washed away by the recent floods will be our sections and that the design has been specially made to suit our sections in order to get urgent delivery. This shows how the design can easily be changed when it is really desired to change it.)

Mr. Sawday.—No.

Mr. Mather.—Supposing the Tariff Board wishes to maintain the present actual arrangement under which the tinbar is not subject to protective duty, but that the flats are, can you suggest any method of differentiation?

Mr. Sawday.—Certainly not the method adopted now.

Mr. Mather.—Can you suggest any other?

Mr. Peterson.—For "The present common merchant, and bar and rod designed for the reinforcing of concrete, all sizes" we have suggested the following as an alternative: "Flats, squares, bars, sheet bar, tinbar, octagons, rounds and rods used for all purposes, including bar and rod designed for concrete work and high silicon and high carbon bars."

Mr. Mather.—If a Customs officer has to deal with a consignment of 8-inch by ½-inch bars, how is he going to tell whether they are tin bars or wide flats used in structural work?

Mr. Peterson.—You can do it by putting in the actual dimensions.

Mr. Mather.—In that case may we take it that you will be content if all bars of approximately the same dimensions as the tinbar supplied to the Tinplate Company are treated as tinbar?

Mr. Sawday.—It would make very little difference to us.

Mr. Peterson.—Yes, if you give the size.

Mr. Mather.—The bars taken by the Tinplate Company are 8″ wide.

Mr. Sawday.—If you exempt only 8″ flats, it would make little difference to us.

Mr. Mather.—It would not affect you.

Mr. Sawday.—Not appreciably.

Sales of black sheet.

Mr. Mather.—I also want a little information about your sales of black sheet. You have given us the average prices, but you have given no information about the thickness of the black sheet that you normally roll to sell as black sheets.

Mr. Sawday.—14 to 21 gauge. The bazaar buys 14 to 18 gauge or nominally 19 to 20 gauge which is really 20 and 21 gauge.

Mr. Mather.—We can get the c.i.f. prices for black sheets of different thicknesses which vary considerably. In comparing them with your average prices, we must know approximately what thicknesses are provided for in that.

Mr. Sawday.—In black sheets 14 to 21 gauge.

Mr. Mather.—Does that include your wagon sheets?

Mr. Sawday.—Wagon sheets are all thicker.

Mr. Mather.—Can you tell us approximately the main classes of sheets with quantities?

Mr. Sawday.—About 15 per cent. are thicker than 14 gauge.

Mr. Mather.—Does that include wagon sheets?

Mr. Sawday.—Yes. Of the remainder, 60 per cent. will be 14 to 18 gauge and 25 per cent. 19 to 20 gauge.

Light rails.

Mr. Mather.—You have also given us among your earlier statements a list of average prices practically of all your products, and also the c.i.f. prices of imported steel of most of these kinds, but you have not given us the imported price of light rails, nor has any other witness given us the import price of light rails.

Mr. Sawday.—It is Rs. 120.

Mr. Mather.—Would that be correct for the first 4 months of this year?

Mr. Sawday.—You remember Sir George Rainy's comment in 1924 that nothing seems to affect light rails. We used to sell at Rs. 130 first and we changed it to Rs. 120 basis. I have checked it every month and I found that it is just about right.

Mr. Mather.—Unless we know the c.i.f. price of imported rails we don't know what the difference is.

Mr. Sawday.—Rs. 120 approximately.

President.—Is that the c.i.f. price with the present duty?

Mr. Sawday.—Yes.

President.—They are rolled on your bar mill.

Mr. Sawday.—Yes. 16″ mill.

President.—The works cost will be taken to be the same as that of the bar mill.

Mr. Sawday.—Yes. 16″ mill.

President.—What about your works cost for fishplates? What are we to take?

Mr. Peterson.—I think we have got a separate cost for them in the bar mill cost sheets.

President.—It is arrived at by some sort of allocation.

Mr. Mather.—You show them as Rs. 20 more per ton than rails and Rs. 10 less than beams.

Mr. Peterson.—Yes.

Mr. Mather.—You don't attempt similar differentiation between different kinds of sheets? I see you have one average figure.

Mr. Peterson.—On the bar mill we roll different products and show the costs of different products.

Mr. Mather.—There is a good deal of difference between the actual costs of thin sheets and thick sheets.

President.—Taking the sheet mill products and the plate mill products, there is only one section that you seem to miss and that is

Mr. Sawday.—$\frac{3}{16}$″ is rolled on the plate mill.

President.—And up to $\frac{1}{8}$″ on the sheet mill.

Mr. Sawday.—Yes.

President.—There is practically no demand for $\frac{1}{8}$″.

Mr. Sawday.—There is a demand but we don't try to meet it.

President.—You have no figures about them.

Mr. Peterson.—No.

President.—Therefore you cannot make any distinction.

Mr. Peterson.— No.

Bombay and Calcutta prices.

Mr. Sawday.—There is one point I should like to mention. Mr. Trivedi giving evidence before the Tariff Board said that prices in Bombay are normally better than those of Calcutta. It is not so.

President.—We didn't go so much by what Mr. Trivedi said as by the figures.

Mr. Sawday.—The figures were very high.

President.—Why should they make out a higher price in Bombay?

Mr. Sawday.—I don't know why they did.

President.—That means that you do not compete much in the Bombay market.

Mr. Sawday.—Perhaps the figures have been put forward as an argument to show that less protection is needed.

President.—As a matter of fact up to now in our calculations we have not taken any other port very much into consideration than Calcutta.

Mr. Peterson.—You can take Calcutta only. We have no objection to that.

Mr. Mather.—Are you able to get for your supplies of structural steel and similar materials to the engineering firms the standard extras for British steel for cut lengths, etc.?

Mr. Sawday.—Yes. We charge cut to length extras. We have one basis —joists. They have angles and bars basis also.

Mr. Mather.—The same for special sections?

Mr. Sawday.—Yes. We get more for bulb angles.

President.—As regards sheet bar and tinbar, they are only used by yourselves and by the Tinplate Company of India and you are not concerned with any tariff.

Mr. Peterson.—Not really.

President.—Is it true to say that the competition comes more from the Continent in sheet bar now than from the United Kingdom?

Mr. Peterson.—None is imported here at all.

President.—Was not one of the disputes that arose with the Tinplate Company that they wanted to pay you at the Continental rates.

Mr. Peterson.—One of the disputes that arose was whether they were entitled to have Continental as a provincial price. The sheet bar was not of a similar quality. We then came to a compromise on being assured by our engineers that if they got Belgian tin bars, they could not roll them into tin-plate. They got out 10 tons and succeeded in rolling them into tinplate. On that point we lost.

Evidence of Messrs. J. C. K. PETERSON, C.I.E., and C. A. ALEXANDER, recorded at Jamshedpur on Monday, the 27th September, 1926.

Future works costs.

President.—I would like to tell you, Gentlemen, that the Board is very much gratified at the way in which you have supplied the information that has been asked for and at the serious attempt that you are making to estimate the future works on the general lines, indicated by it as far as possible and I think that it will considerably shorten our labours. I hope that most of the economies that you anticipate would be realised in a reasonable time.

This is the sort of procedure I wish to follow this morning. We shall start on Statement No. 83—which is the summary that you have given—as the basis. Having dealt with all the points in this Statement we shall go through the other Statements as we did before and put such questions as I or the other members may wish to ask you. As regards Statement No. 83, what production shall we take for 1925-26?

Mr. Peterson.—319,000 tons.

President.—But that includes a certain quantity of pig iron.

Mr. Peterson.—No, it excludes the surplus pig iron.

President.—For the purpose of determining the incidence per ton of steel if we took about 350,000 tons, I think, it would be about right.

Mr. Peterson.—Yes.

President.—As regards labour if you wish to treat that part of your examination as confidential, the Board will have no serious objection.

Mr. Peterson.—Yes.

President.—Then, we can make use of the confidential note.

Mr. Peterson.—Yes.

Reduction in labour.

President.—We shall take the labour according to each department. First of all, you propose a general cut of 15 per cent., I take it.

Mr. Peterson.—At present 10 per cent. and another 5 per cent. later on.

President.—All the 15 per cent. cut will be effected within the period.

Mr. Peterson.—Yes.

President.—Then, you propose to make adjustments for increase wherever necessary.

Mr. Peterson.—I think that some increase will be necessary.

President.—To determine the incidence of wages per man, would it be right to divide the total wages bill by the total number of men? If you did that, I think that it would give you a fair average.

Mr. Peterson.—Yes.

President.—You expect a reduction in the pig iron department according to these figures. If we followed the figures of the Indian Iron and Steel Company, there would be a reduction of about 2,855 men.

Mr. Peterson.—Approximately that. It comes to 1,735 according to my calculations after making the necessary allowances.

President.—We shall take this figure of 4,000 as near enough. There would be a reduction of 2,855 men. Against that, you claim an increase of 1,160 men. So, there is a nett decrease of about 1,700 men.

Mr. Peterson.—That is right.

President.—What is your total wages bill this year?

Mr. Peterson.—Rs. 142 lakhs.

President.—If you divide that by 26,000 men . . . . . That will be about Rs. 550 a year. I was just trying to see what that would save in rupees now. 550 x 1,700, that is nearly Rs. 9½ lakhs. I know it is not correct, but that it is only an average. Then, I take it this increase that you are asking for in this department is in addition to what you are asking for in the Wilputte coke ovens?

Mr. Peterson.—That will be in addition to the increase in the establishment that will be required for the new coke ovens. We have worked out the figure for the new battery of coke ovens separately on page 4 of our note on labour.

President.—That is the only new item, I take it, in the blast furnaces?

Mr. Peterson.—That is the only one of any importance.

President.—What I wish to know as regards items (*a*), (*b*), (*c*), (*d*) and (*e*) is this. You are introducing a number of labour saving devices in your new development programme and I should have thought that it might not be necessary to have many more men.

Mr. Peterson.—Of course this is a very rough estimate. Which particular item do you refer to?

President.—Take, for instance, the additional number of men you say you would require for the Koppers ovens.

Mr. Peterson.—We will always require these men because we have not put in any new mechanical plant there. The point is this, you are comparing three old furnaces with more modern ones; then again the additional sand casting will require additional men. We have to put all the iron in the sand.

President.—I was just trying to draw your attention to this as it did strike me that with more modern equipment and labour saving devices there might be some saving.

Mr. Peterson.—The fact is we have not drawn this up with absolute accuracy. We might be able to put in plant which would mean a saving in the number of men. Here I am only comparing the existing state of affairs in the two plants.

President.—What it comes to is this that so far as your old plant is concerned it is inefficient measured in terms of men to the extent of 1,200 men; is that correct?

Mr. Peterson.—It has that disadvantage compared with an entirely modern plant.

President.—As regards this reduction of 10 per cent. in the entire staff that you are talking about in paragraph 6 of your note, I am very glad that the General Manager has issued orders to that effect. How long do you estimate it would take to carry it out without calling for any labour trouble?

Mr. Alexander.—12 months.

President.—I suppose your method would be not to re-employ them or fill vacancies when they go away?

Mr. Alexander.—We shall have to make a wholesale reduction. During the last year we have been going right through the plant and trying to fix a limit; when we have done that we will stop re-employment or further employment.

President.—And the remaining 5 per cent. you think you will be able to reduce when the new units come in?

Mr. Peterson.—Yes. As they begin to operate we can do with less and less reserve so to speak.

President.—In any case that further reduction will not be attained until you have more or less reached your estimated full production?

Mr. Alexander.—That is so; it will be a gradual reduction.

President.—You talk of an increase in wages on the last page of your confidential note, but since we last reported, I take it, there has not been any general rise in wages at all?

Dr. Matthai.—The way you have put it here suggests that although you are reducing your labour establishment by 10 per cent. you are expecting a nett increase in the wages of 5 per cent.

Mr. Peterson.—What we propose to do is to increase the wages and reduce the number of men. I was looking more to the rises in the standard of comfort of the labourer than a general rise in prices. We would expect to get increased efficiency with higher pay.

President.—That increase, you think, would be brought about partly by a general rise in wages, that is what it comes to.

Mr. Peterson.—If the industry flourishes the standard of the labourer should rise.

President.—That is to say, the number of men would gradually be reduced but they would gain in efficiency and for that reason they would expect higher pay and, therefore, your total wage bill would increase?

Mr. Peterson.—It operates both ways. As their wages increase their efficiency will increase and as their efficiency increased more and more their wages would also increase.

Mr. Alexander.—It is inevitable that the maximum reduction would be in the lower paid staff.

Mr. Peterson.—We definitely want to raise the wages of the men but we don't want to say that publicly!

President.—That is a very laudable desire.

Mr. Peterson.—I think that it is sound business. As the standard of comfort rises the standard of efficiency will rise with it.

President.—I will now deal with the reduction in the old mills. Your figures do not quite agree with mine.

Mr. Peterson.—We have taken these from the original printed figures given in statements 76, 78 and 80.

President.—They make a total of about 1,900 men.

Mr. Peterson.—The total force employed at present is 2,236.

President.—Here you have made no allowance for the saving in the unproductive departments. That is really where the difference arises.

Mr. Peterson.—Some of that might come in.

President.—I would make an allocation of 10 per cent. to the old mill. I excluded the pig iron and my figure came to about 500 out of which I gave you about 10 per cent. for the old mills. That gives you an additional 650 men which brings the figure to about 2,800 men.

Mr. Alexander.—That is about right.

President.—I think it would perhaps be just as well to add together this 1,900 and 650 and make it 2,500.

There is only one other item that I think is very doubtful and that is as regards the new hoop and strip mill. It does strike us that at any rate for a long time to come . . . . . .

Mr. Mather.—Perhaps the most important factor is that provision for the hoop and strip mill has not been made in the development programme and therefore we have been leaving that out of account altogether.

Mr. Peterson.—We can leave that out. It does not make any difference for the purpose of calculation.

President.—It really amounts to this that you have got to get rid of 1,200 men from this summary that you have given.

Mr. Alexander.—If you deduct that you have got to add some to put on to the new mills.

President.—That is only a very small proportion about 1,000 men. What we will do is this. In this total of 24,447 we add 200 and then we deduct 1,200 from it. It gives you 23,400 men.

Mr. Alexander.—That is right.

Mr. Mathias.—What is this new hoop and strip mill against which you show an increase of 500 men?

Mr. Peterson.—That has been left out of the calculations.

Mr. Mathias.—Would not that make a difference in the cost per ton of steel? How are you going to finish your steel if you are not going to have your new hoop and strip mill?

Mr. Peterson.—If you want to do it with strict accuracy you can deduct the tonnage from the total tonnage.

Mr. Mathias.—Would you be able to use the ingots you produce in any other way?

Mr. Peterson.—That is another matter. We can leave it out of account. We might start many other things which would not enter into these calculations.

President.—Coming to Statement No. 83, it would just leave the estimate for 1933-34 at about Rs. 145 lakhs, if you deduct this 1,000 men.

Mr. Peterson.—Just about it.

President.—Altogether we shall take for the sake of calculation, Rs. 5 lakhs less for these 1,000 men.

Mr. Peterson.—We do not profess to have estimated this within 10 per cent.

President.—If you made a reduction of Rs. 5 lakhs on account of the reduction of 1,000 men, that would about bring it into line.

Mr. Peterson.—That is about right.

President.—We will take the total for labour at Rs. 145 lakhs instead of Rs. 150 lakhs. Let us now see what the result is. In 1925-26 the incidence per ton is about Rs. 40 and the incidence in 1933-34 will be about Rs. 24.

Mr. Peterson.—That is right.

Stores and Supplies.

President.—Then as regards stores and supplies really I have very little to say. The incidence comes down from Rs. 25 per ton to Rs. 20 a ton.

Mr. Peterson.—Yes.

President.—And that allows, I think, for the economies due to higher production and I take it that it also allows for a reduction in the cost of rolls.

Mr. Peterson.—That is where most of the reduction would come in.

President.—It would come very largely, I take it, by the drop in the price of stores by reason of the exchange and also the more economical use of rolls.

Mr. Peterson.—Yes. There the very large item is purchased materials such as ferro silicon, etc.

President.—I am not taking that into account. I am taking your own figures.

Mr. Peterson.—Are you taking only the top ones?

President.—I am just considering whether you have taken all these factors into account. As regards the price of raw materials nobody can tell.

Mr. Peterson.—No.

President.—We must take our chance. The economy suggested there is about Rs. 5 a ton.

Mr. Peterson.—That is about right.

President.—The way I look at it is this. Your production rises in the interval from 350,000 tons to 600,000 tons. That is to say your production is now about seven tenths of what it would be eventually. If I were to divide the incidence by seven tenths, it would come to about Rs. 15 instead of which you have Rs. 20. I suppose the explanation is that it cannot be reduced in the same proportion.

Mr. Peterson.—That is right.

President.—There will be some increase.

Mr. Peterson.—The more you reduce it now the more difficult it is to reduce it further.

President.—Then the next big item is coal and fuel.

Mr. Peterson.—We have simply taken the Board's estimate.

President.—I was wrong. I took 3·81 as the average consumption in 1925-26 whereas it works out to nearly 4·1. That accounts for the difference. It means that you save on the total cost of coal about Rs. 8 and the other economies arise from less handling and so on but the incidence of this is Rs. 37 and Rs. 24, respectively.

Then as regards ore I see you are allowing for a reduction of Re. 1 a ton

Mr. Peterson.—That is largely guess work.

President.—The incidence would be about Rs. 9.

In flux and refractories also the incidence comes down from Rs. 7 to Rs. 6 a ton. The result is that the total incidence comes down from Rs. 120 to Rs. 83, *i.e.*, Rs. 37. We have got somehow to get some idea as to when these economies will begin to be realised. We can only get a rough idea. Let us take 1926-27. First of all we simply allow for economies by reason of increased production. On that ground I should think we should be fairly safe.

Mr. Peterson.—Yes, if we took the proportionate reduction according to the increased production.

President.—Would it be safe to take for this year's production say about 380,000 to 400,000 tons? In one way I calculated 375,000 tons. That was near enough. I don't know whether it would be safe to assume a higher figure.

Mr. Alexander.—The figure I gave is 360,000 tons.

President.—Then as regards 1927-28, I think about 420,000 would be about the figure.

Mr. Alexander.—410,000 tons.

President.—You say about 410,000 tons. I thought when we calculated last time, it came to 420,000 tons.

Mr. Alexander.—We didn't discuss the ingot production of 1927-28.

President.—However, there is not very much difference. You say 410,000 tons and I say 420,000 tons. I simply want to know whether you agree that in making a sort of general estimate we might take that as the basis.

Mr. Peterson.—That is the fairest way to do it.

President.—As regards other economies, we have simply to guess.

Mr. Peterson.—I think it is quite safe to guess that the economies will be realised with the increasing output both in efficiency and reduction of overhead charges.

Closing of the old plant.

President.—There is another question. A good deal will depend upon the date on which you close down your old mills. You considered, at one time, that it would not be before 1931-32, but I think in your later estimate you said you would expedite it?

Mr. Alexander.—Yes.

President.—It is like this: In the earlier years we may take it that the economies will arise mainly from increased output.

Mr. Alexander.—Yes.

President.—And your output will reach perhaps the maximum of 425,000 tons before any new units come into operation.

Mr. Alexander.—Yes.

President.—And then the new units will come into operation which would take about 4 or 5 years. There would be a period of a little uncertainty whilst the new units are coming into operation, is not that so?

Mr. Alexander.—That is right.

President.—Then, your new units will come fully into operation according to your programme and give you the final results.

Mr. Alexander.—Yes.

President.—Then, you may expect more rapid economies until you reach the anticipated results, is not that so?

Mr. Alexander.—That is right.

President.—We have got this figure of Rs. 37 which is the difference between Rs. 119 and Rs. 82. That has to be worked down from 1925-26. At the end of the period it must come down to Rs. 82. How to apply this figure is a matter for discussion now. So far as the ordinary rail mill product is concerned, would it be safe to deduct the whole of the amount whatever that is and say that the difference would be the ultimate figure of works costs.

Mr. Alexander.—How do you mean?

Rolling costs.

President.—Let us take rails first. In 1925-26, the cost at the new rail mill is Rs. 96 per ton.

Mr. Peterson.—Yes.

President.—What I wish to know is this. If I deduct Rs. 37 from Rs. 96, the works cost of rails comes to Rs. 59 per ton at the end of the period. Would that be right or would you suggest any other figure? I don't want you to reply in a hurry. Just think it over and tell me.

Mr. Peterson.—I would like to put it this way that we might hope to get that cost in time.

President.—That is what we expect you to do.

Mr. Peterson.—It is a question of time.

President.—As regards the products of the other mills, there may be adjustments to make but it seems to me that so far as rails are concerned, more or less the whole of the reduction or very nearly that may be made. I want to know from Mr. Alexander, if he was making an estimate having got those figures, whether he would make the whole reduction or whether he would make a smaller reduction to be on the safe side.

Mr. Alexander.—I don't say that it is impossible, but whether it is going to be achieved or not is another thing.

President.—If every condition was fulfilled and everything else remained the same and if nothing went wrong!

Mr. Alexander.—Yes, in that case.

Mr. Peterson.—Mr. Alexander's figure was Rs. 69—see Supplementary Statement No. 46.

President.—In that Mr. Alexander has not made allowance for any reduction after the ingot stage.

Mr. Peterson.—If you don't limit us to any time, then we say that we hope to do it but if you limit us to any period, then it becomes much more difficult.

Mr. Alexander.—It is a theoretical figure. We do not know what will go wrong. You have made assumptions on the low side and no allowance has been made in the calculations for things going reverse.

President.—I am looking to you to point out those circumstances.

Mr. Peterson.—There is not really very much difference. Mr. Alexander has said that he cannot estimate within 5 per cent. or possibly 10 per cent. His figure is Rs. 69 and your figure is Rs. 59.

President.—Now we have got the two extremes. You have got Rs. 96 at the one extreme and Rs. 59 at the other. What do you suggest is the average? The average will be derived in this way. We will have to reduce Rs. 96 to a figure representing the cost at the end of 1926-27 or somewhere in 1927-28 and then after that we will have to make some adjustment which would give you the fair average works cost. Do you see the point?

Mr. Peterson.—It is difficult. Unless you have a sliding scale, you would go wrong at one end or the other.

Mr. Alexander.—If we take 1925-26 and 1926-27, there will be a reduction of Rs. 16. If we were to do that next year, it would come down to Rs. 64. We know that it is impossible.

President.—That is what I am trying to point out. I calculated a difference of roughly about Rs. 15 or 16, between 1925-26 and 1927-28. I have not got the figures worked out in detail. In fact, you have already brought down the cost to Rs. 80.

Mr. Alexander.—That is largely on account of the trouble in the second class rails.

Mr. Mather.—You have eliminated that during this year?.

President.—I have told you that there are three stages. In the first stage, there will be a rapid reduction beginning from 1925-26 which may stop about the time you get your full production out of the old units. There is the further period which is one of uncertainty and then there is the last period which is more certain. The only thing that remains is the intermediate period of 4 or 5 years and, for that, it seems to me that it would be very difficult to improve on the arithmetical mean of Rs. 69, between Rs. 80 and Rs. 59.

Mr. Mather.—Suppose we started a little later and assumed that the average cost was Rs. 80 and that at the end of the period your average cost was Rs. 60, should we be justified in taking Rs. 70 as the average cost of the rails for the period?

Mr. Alexander.—10 years—yes, and 4 years—no.

President.—Assume a ten-year scheme, in the first 3 years and in the last 3 years we get more or less definite figures. It is only during the period of 4 years between the two periods that the cost may be uncertain.

Mr. Mather.—For the average period of 10 years, would the figure of Rs. 70 be approximately correct?

Mr. Alexander.—Yes, but not for the average of three or four years.

President.—That is what I wanted to know; that is really the arithmetical mean.

Mr. Peterson.—I don't see any other way of doing it.

President.—The difficulty arises in this way. In the new rail mill, you are at present rolling rails only.

Mr. Alexander.—That is right.

President.—If we took the average cost of the rails, would that apply to other products of the rail mill or would the average be higher?

Mr. Alexander.—Yes, for ten years but not for five years.

President.—Would it be set right at the end of the period or would it be higher in the interval?

Mr. Alexander.—When we start rolling structurals, the cost may even go up in an individual year unless the cost of blooms charged is sufficiently low to overcome the higher conversion cost.

Mr. Mather.—For the average of the ten year period, would it be fair to take the same works cost for heavy structurals as for rails?

Mr. Alexander.—That is the way we do it.

President.—As regards the merchant mill, there is only a reduction of Rs. 6 as compared to Rs. 16 in the case of the rail mill, since 1925.

Mr. Mather.—That is because of the effect of the second class rails which has been eliminated.

President.—So far as this is concerned, I wish to know what would be the starting point. Let us call it Rs. 100. At the end of the period beginning from 1925-26 it would give us a cost of Rs. 63 if we made the whole reduction, which is very much below your estimate. So, I don't understand it.

Mr. Alexander.—You are excluding the old mill.

President.—The old mill would not reduce the cost.

Mr. Alexander.—I would have made Rs. 85 into Rs. 75.

President.—All I wish to know is what adjustments we should make between 1925-26 and the end of the period.

President.—In place of the figure of Rs. 80 that we assumed just now for rails, what do you think would be a safe figure to assume from your point of view for the beginning of the period? In the case of rails from Rs. 96 we reduced it to Rs. 80 for the purpose of this discussion. In the case of this merchant mill what would you suggest as the figure corresponding to the figure for rails?

Mr. Alexander.—Rs. 85.

Mr. Mather.—The President is taking for this discussion Rs. 80 as the cost of rails;—that would be approximately the same as your present cost of rails—do you mean to suggest that we should be justified in taking Rs. 85 as fairly representative of your merchant mill cost now when your actual cost for August is Rs. 99?

Mr. Alexander.—I should say Rs. 95.

President.—The previous cost was Rs. 105, that is to say you would reduce it by Rs. 10, so that the total reduction that is to come is Rs. 27. That gives us Rs. 68. The arithmetical mean, is Rs. 82. Will that apply to all products—light structural, bars and everything else?

Mr. Alexander.—Yes.

President.—Do you maintain your cost sheets in a way to be able to show what the difference is between light structurals and bars and so on?

Mr. Alexander.—No, we have never done it.

President.—Take a product like channels. Would they cost about the same as the average cost of bars or would they be higher?

Mr. Alexander.—Higher.

President.—I want to know what you would estimate as the difference, because the trouble is that channels and things like that go with structurals in all our estimates whereas bars are separate, and I wish to know what would be about the difference.

Mr. Alexander.—10 per cent. higher than the average cost on the mill, for channels and tees.

President.—What percentage of the total structurals would be channels and tees?

Mr. Alexander.—You can get the actuals from the cost sheets. We will have to take the two mills together.

President.—We have got to determine the price of bars. It would not be right to apply the average figure because you have got the actual difference between bars and other products.

Mr. Peterson.—Take the average cost of the mill and then add 10 per cent. to the other products.

Mr. Mathias.—If you add 10 per cent. to some products you will have to deduct 10 per cent. from others.

Mr. Alexander.—Yes. Larger angles would be cheaper and the smaller would be more expensive than bars.

Mr. Mathias.—Would bars be about the average product?

Mr. Peterson.—Bars are much the greater tonnage and therefore really make the average.

President.—Will you roll your heavier angles and things like that on the merchant mill or on the rail mill?

Mr. Alexander.—We will have to roll them on the rail mill for the present.

President.—On the new rail mill what exactly are you going to roll besides rails and structurals? Among structurals would you roll all sections?

Mr. Alexander.—From 4″ angles to 24″ joists.

President.—Which you are at present rolling on the 28″ mill?

Mr. Alexander.—Yes. We should have an intermediate mill to roll those sections which are too light for the new rail mill but not having any we have to roll them on the rail mill.

Plate Mill.

President.—We will now take up the plate mill. In the plate mill really the position is somewhat complicated by two things, namely, that in 1925-26 you were writing down the shortages and also you were not crediting the mill with the full value of the cuttings. Now I take it you have written off all your shortages. In 1926-27 there is nothing to be written off?

Mr. Alexander.—The stocks are square.

President.—There is then no adjustment to be made on that account after that date?

Mr. Alexander.—No.

President.—As regards the scrap you are crediting it at Rs. 35 on an average?

Mr. Alexander.—Yes.

President.—So far as your August figures are concerned have you taken that as the average?

Mr. Alexander.—Yes. We were actually selling at that price.

President.—If you compare that figure with the price actually realized, the point is whether you have given enough credit to the works for the value of the scrap, defective plates or whatever it may be?

Mr. Alexander.—I don't think we have but, on the other hand, there is reason for us in not doing it because we do not know how long the scrap market is going to continue.

President.—In supplementary Statement 63 you give us the figure for 1925-26 and your contention is that on an average for the period Rs. 35 would be a safe figure to take.

Mr. Alexander.—I would not take more than Rs. 25 over a period of ten years because the sale of it is getting less and less, and the more we make the more we will put on the market and the less we will get for it.

President.—Have you ascertained the actuals for August?

Mr. Alexander.—No. I do not see the figures every month, but I know we are consuming more and more in the open hearth and less is being sold.

President.—If the price of your pig iron goes down the price of your scrap will also fall?

Mr. Peterson.—Yes. But that would not affect plate cuttings which are mostly used for tools.

President.—As regards the scrap that you put back into the furnace you expect Rs. 20 but as regards the general average of scrap so far as the plate mill is concerned you suggest Rs. 25?

Mr. Alexander.—There will always be a small market for plate cuttings in India.

Mr. Mather.—Apparently you sold over 6,400 tons in 1925. Is there any reason to expect that you would not be able to sell that quantity during the year?

Mr. Alexander.—We are not selling as much to-day and not getting the same price for it.

President.—So far as the plate mill is concerned, you have already reduced your costs from Rs. 124 to Rs. 103, so that the cost ought to go down from August onwards by Rs. 16 a ton to the end of the period, or a total reduction of Rs. 37 to Rs. 87. That gives you an average price of Rs. 95. It looks a good deal higher. A part of this reduction is not really reduction because this reduction of Rs. 21 is due to the writing down of your stock. How much did you write down that year?

Mr. Alexander.—1,200 tons in 1925-26.

President.—At what rate?

Mr. Alexander.—100 tons a month.

Mr. Mather.—1,200 tons in 1925-26, which is 5 per cent.

Mr. Alexander.—About Rs. 6 or Rs. 7 on account of that and Rs. 13 on account of the scrap.

President.—That scrap has gone in throughout. That means, really speaking, you have brought down your costs from Rs. 117 to Rs. 103.

Mr. Alexander.—That is right.

President.—The difference is Rs. 14. The economy that you have to effect from that time onwards is Rs. 23. That is to say it will bring your works cost down to Rs. 80. Then the arithmetical mean of Rs. 103 and Rs. 80 is Rs. 91·5 or Rs. 92.

Mr. Peterson.—Yes.

President.—Your plate mill has always been a puzzle to me.

Mr. Alexander.—Why?

President.—Because it is not very particular as to how its costs go up or down. Let us take sheet bar. In 1925-26 the cost was Rs. 78. Is there any difference between the costs of billets and sheet bars.

Mr. Alexander.—No.

President.—So far as sheet bar is concerned, it is not a semi-finished product; it is a less finished product than the rails. If you take the proportion between the works costs of the rails and the sheet bar, the present proportion is 100 to 70 and then the reduction would, I take it, be in that proportion.

Mr. Alexander.—Not necessarily.

President.—What do you suggest—more, or less?

Mr. Alexander.—I have not studied that, but I should take it in the proportion of the conversion costs of the two mills.

President.—First of all your costs in 1925-26 were Rs. 78. In August 1926 they were Rs. 71, so that you have already worked off Rs. 7 out of Rs. 37. What now remains is Rs. 30 and two-thirds of Rs. 30 is Rs. 20 and then you make a reduction of Rs. 20, so that if you deduct Rs. 20 from Rs. 71 it gives you Rs. 51 and on these figures the average works cost will be Rs. 61.

Mr. Alexander.—Your calculations are right.

Mr. Peterson.—Rs. 61 is the figure which we have given you at the end of the ten-year period.

President.—We come to the sheet mill. We have not got any figures really speaking which we can reasonably use because your production is small and you have got trouble about covenanted labour. All your mills are not working.

Mr. Alexander.—Take the same Rs. 37.

President.—Hardly that. Take the sheet bar; and deduct from the sheet bar what you have deducted before, and then make a reduction in the spread. That may be a way of doing it.

Mr. Alexander.—Yes.

President.—So that I think in this case it is very difficult to arrive at an earlier figure. We may have to work backwards. First of all I think we may have to determine what your cost would be at the end of the period. What spread do you suggest between the sheet bar and the black sheet?

Mr. Alexander.—Rs. 74.

President.—That gives you Rs. 125.

Mr. Alexander.—Yes.

President.—You gave Rs. 135.

Mr. Alexander.—The price of sheet bar has dropped.

President.—What is the spread now?

Mr. Peterson.—It is Rs. 96.

President.—So that you make a reduction of Rs. 22 in the spread.

Mr. Alexander.—Yes.

President.—Roughly speaking may we take that as your opinion, Mr. Alexander?

Mr. Alexander.—In the same sense as you have taken the others.

President.—That is to say if sheet bar is taken at Rs. 51 the cost would be Rs. 125.

Mr. Alexander.—Yes.

President.—In this case how are we to determine the average? We have got the two extremes. The present cost is Rs. 164 and you give Rs. 125 as the future cost. The average is Rs. 145. It may be that in the earlier years your costs are higher than in the later years. As regards galvanized sheet, you give a spread of Rs. 80 between black sheet and galvanized sheet at the end of the period. On these figures the works cost of the galvanized sheet would be Rs. 205.

Mr. Alexander.—Yes.

President.—At present the cost for plain galvanized sheet is Rs. 255.

Mr. Alexander.—Yes.

President.—As regards corrugated galvanized sheet the present cost is Rs. 263 and the average is Rs. 234.

Mr. Alexander.—Yes.

Mr. Mather.—There again you would expect your costs to come down more in the next few months or in the next year or two than in the case of some of the old mills since that has been in the early stage of development hitherto.

Mr. Alexander.—Undoubtedly it will come down as the production goes up in the next two or three years.

President.—It is very difficult to make an estimate of how the costs are going to come down. Really you have not got sufficient figures.

Mr. Alexander.—No.

Steel Sleepers.

President.—The last is the steel sleepers. There again you have not got any intermediate costs. Then I think whatever intermediate costs we take for sheet bar or whatever average cost we take for the sheet bar, it might give us a figure if we simply add the spread. The spread is Rs. 24 in the case of steel sleepers. That is an excessive spread.

Mr. Alexander.—It all depends on what we are going to do with second class sleepers.

President.—It does strike me that it is really a very big figure. It does not seem to you to be a very important proposition just now. To my mind it is very important from the Steel Company's point of view. The cheaper you produce your sleepers, the better it is for the Company. Your business is chiefly to attend to the cost. The position as regards sleepers is very vague. You have got the cast iron sleeper which is a competitor but which you can compete against. There is also the wooden sleeper. So, the policy of the Company should be to bring down the cost of the steel sleeper to the level which would rule out the wooden sleeper in any case. It does not matter to you whether they use cast iron sleepers or steel sleepers so long as wooden sleepers are not in your way. The only way in which you can do it is to reduce your selling price of steel sleepers. It does seem that this spread of Rs. 24 is really excessive. It is a very simple process. I am just putting it to you from your own point of view.

Mr. Peterson.—The quotation we get from England for sleepers is £9 a ton and England actually sells rails to this country at £6-5-0 a ton.

Mr. Mather.—You cannot compare these two prices. The new price for steel sleepers is presumably the Association price.

Mr. Peterson.—Take the price of £7 which is the quotation from the Continent.

President.—The Railway Board got them at £7 f.o.b.

Mr. Peterson.—That is also from the Continent.

President.—I am just putting it to you from the point of view of the Steel Company itself.

Mr. Peterson.—I am pointing out to the Board that the spread abroad is considerable. The quotation for steel sleepers is always higher than the quotation for rails. I am merely justifying the high spread that we are giving. The spread in England and on the Continent cannot be very low. If it is, why should not they sell sleepers at a low price?

President.—Even if you take Rs. 51 for your sheet bar and add Rs. 24 to that, the sleepers will cost you only Rs. 75 a ton.

Mr. Alexander.—Yes.

Mr. Peterson.—As regards sleepers, it is a question between steel sleepers and cast iron sleepers.

President.—If it is a question of cast iron sleepers, it does not affect you. You can compete easily.

Mr. Peterson.—We will have to put up a special equipment.

President.—I understand that anyhow some of the Railway Companies—I am speaking from recollection—would not mind buying cast iron sleepers.

Mr. Peterson.—You have to consider the value of the pig iron in the sleepers. I think that cast iron sleepers will replace steel sleepers.

President.—It does not matter to you if that happens.

Mr. Peterson.—It might pay us better to make cast iron sleepers.

President.—The only thing you ought to do is to bring down the cost of steel sleepers very low and the cost of cast iron sleepers lower still.

Mr. Peterson.—I am going to discuss it with Government in November. It is a question for the Steel Company whether it pays the Company better to manufacture cast iron or steel sleepers.

President.—What is the equipment for steel sleepers? It does not cost you more than Rs. 2 lakhs.

Mr. Peterson.—It takes time to put that up.

President.—You must have both plants. If the Railway Board or a Railway Company wants steel or cast iron sleepers, you should be in a position to supply them. You can keep both the plants. Neither of them is expensive. It is not like a rolling mill, which, if it is idle, would cost you a lot of money. The steel sleeper plant is nothing at all in your big works. You

have not so far fulfilled the first condition. They go by price and you have not given them a good offer.

Mr. Peterson.—What rules the question is the price of steel sleepers after they have been used.

President.—Then, offer them cast iron sleepers.

Mr. Peterson.—That is what we are actually doing. We are making tie bars for cast iron sleepers made from iron pig. It pays us handsomely to manufacture these. We are not at all sure that it is not the soundest policy for the Company to continue to do that. We can tell the Board that we have proposals from two large firms for the manufacture of cast iron sleepers. What we really want to do is to manufacture tie bars.

President.—That disposes of all the rolled steel, so far as this aspect of the case goes. As regards overhead charges and manufacturer's profit and so on, do you suggest that it should be an average or do you suggest that it should be distributed in different proportions?

Mr. Peterson.—Take a lump sum—that is much the easiest way of doing it. You can also take the proportion.

President.—Supposing we take the case of sheet bar and sleepers, there is very little to be added after the sheet bar goes on to the sleeper plant. It is not worth taking into account, so that about two-thirds of the overhead and other charges might be borne by sheet bar. Supposing we did that, then to the extent to which that fell short of the average amount, the total profit would be diminished.

Mr. Peterson.—We would have to increase the other; otherwise the return is insufficient.

President.—If you add the whole of the overhead charges, profit, etc., to the semi-finished products, then if they are protected, the protection goes up.

Mr. Peterson.—The weighted average on the tonnage can be worked out.

President.—At present it really does not make very much difference because the total production of sleepers is 25,000. tons.

Mr. Peterson.—There is not very much difference between the products either.

President.—In the case of galvanized sheets, for instance, my colleague, Dr. Matthai, points out that it would put protection up.

Mr. Peterson.—The best thing is to take the total and distribute it.

President.—In the case of galvanized sheets, the fair selling price will go down whereas in the case of sheet bars and in the case of the sleepers, it will go up.

Mr. Peterson.—I cannot obviously admit that it should be reduced. It is a trifling amount one way or the other.

President.—What should be reduced?

Mr. Peterson.—The total should be reduced.

President.—The idea is that in any scheme that we propose you should get the average. I am asking you how you suggest we should do it. There are two difficulties. One is that if we adopted the method of proportionate incidence in the matter of overhead, manufacturer's profit, etc., the fair selling price of galvanized sheets for instance would be very much increased.

Mr. Peterson.—The simplest way is to take the total and distribute it per ton.

President.—When we come to measure the amount of protection what are we to do?

Mr. Peterson.—Take the case of sleepers and corrugated sheets. In addition to considering the works cost, the selling price and the market may also be considered.

President.—A particular product must not be made too expensive.

Mr. Peterson.—That is what I mean.

President.—The difficulty does not really arise if your production of sleepers is confined to about 25,000 tons. In the case of sheet bar, really it does not matter. If you take your production of sleepers at 25,000 tons, even if you lose one-third, it would not amount to anything. It is only when you make sleepers on a large scale, the question would arise.

Mr. Peterson.—Yes.

Workshops.

President.—I would like to draw your attention to one or two things in connection with your workshops. I do not know whether you have any system of accounting in the workshops. I have not examined you on that point.

Mr. Alexander.—There is none.

President.—What struck me was this. It did not seem to me that you really knew what your workshops were doing from a commercial point of view. As regards repairs of course, I confess it is a very difficult thing to keep a system that can be very accurate, but as regards making spares, I think that it is possible for you to adopt a system which would give you some idea as to whether it is cheaper for you to make those spares in your works or whether it is better and cheaper to import them. Have you got any plans for the future?

Mr. Alexander.—Nothing excepting to get some one who knows about these things to do it in detail!

President.—The expenditure in the workshops is a very substantial amount. There may be wastage of material, there be wastage of labour and a thousand and one other things. We have not got the figures really to find out what is being done. I am putting it to you as a general proposition that from what little I saw there seemed much room for economy. I did feel, when walking through the workshops, that you had far too many men there. Some of them you might do without.

Mr. Alexander.—We have already said that we can do without some of them.

President.—As regards other things, also this department requires particular handling.

Mr. Alexander.—Each one requires particular handling.

President.—There is no attempt made, now, but I hope at some later stage you would be able to say that you had taken some steps to reduce the cost of these shops apart from the question of labour.

Mr. Peterson.—That question will be very difficult in the next three or four years when they will be engaged in new construction.

President.—You may get that work done by contract.

Mr. Peterson.—We cannot do it like that. There is no on else in India who could make for us.

President.—I have nothing to say except the general impression that I have formed that there is no system.

Mr. Alexander.—There has been none ever since I have been here.

Dr. Matthai.—You should know how much time a job ought to occupy, should you not?

Mr. Alexander.—We have no standard jobs. 98 per cent. of the work is not standard at all.

Dr. Matthai.—Don't you repair your rolls?

Mr. Alexander.—That is all turned in accurately. . . . .

Dr. Matthai.—Haven't you any kind of other standard jobs?

Mr. Alexander.—Nothing.

President.—Have you got in your accounts department any kind of accounting which may be called shop accounting?

Mr. Alexander.—We have not. What you mean is have we a system of shop accounting in the shop itself. We do not.

President.—So that the man in the office does not necessarily know what the costs should be in the shop; that is the difficulty. I do not want to pursue the matter further but there were one or two things that I saw in the shops and I wanted to bring them to your notice.

Continued on the 28th September 1926.

The period of protection.

Mr. Peterson.—Before we begin this morning I would like to deal with one or two points that the President raised yesterday. You will remember we took a figure at the beginning and a figure at the end of the ten years period, for purposes of calculation. On those figures we averaged the cost for ten years. If we took those figures at the beginning it would mean a difference in the works costs of Rs. 66 lakhs; that is to say the total works expenditure on those costs for a production of 420,000 tons would be Rs. 354 lakhs as against Rs. 421 lakhs in 1925-26 for a production of 350,000 tons. I want to point out the danger of this as you might put the protection too low to begin with.

President.—I will again explain to you the principle on which any scheme which the Board might put forward will be based. If we propose a scheme for seven or ten years, then in fixing an average fair selling price we have got to consider whether such a scheme would provide you with sufficient funds to meet all your legitimate liabilities. That is a point that we must take into account in any scheme that we might put forward. We cannot say that your debenture interest, for instance, should not be paid or nothing should be paid to anybody.

Mr. Peterson.—You asked me yesterday whether we considered it would be fair to take the arithmetical mean as a fair cost. I said yes. But I wish to put this consideration before you.

President.—I suggested that the arithmetical mean was the best way of arriving at a figure; then I asked you whether you had any better proposal to make and you said you had none.

Mr. Peterson.—We suggested the average of the first five years in our representation.

President.—That would obviously be a very high figure.

Mr. Peterson.—I do not think so. As I said the difference in actual money is there; that is what I point out. If you were to apply the figure we took yesterday you will get a difference of Rs. 66 lakhs in one year in the actual expenditure on works costs. We cannot possibly get that in one year and cannot probably get it in two; that is to say, if that figure is applied at the beginning it assumes that our works cost would be reduced to Rs. 80 at once. That is of course impossible and the difference in actual money is very great.

President.—Supposing we took 420,000 tons as about the figure that you would reach at the end of 1927-28, then I suggest to you that if I divided the works costs in that proportion which are again based on 1925-26 costs, that would give a figure which would represent your approximate works cost at the beginning of 1928-29.

Mr. Peterson.—I should not expect it to because that is the figure we expect to get at the end of five years. The average figure we suggested yesterday, for instance a cost of Rs. 70 a ton for rails, and Rs. 83 for bars, is the cost we would expect after five years. If you apply that for the purpose of protection in the first, second or third year, it is very probable that the protection would be too low and the same thing would happen as after the original enquiry. For the first two years the protection would be ineffective.

President.—On the other hand in the next five years your protection would be very high.

Mr. Peterson.—That is perfectly correct, but in the first two or three years that would put such a strain on the industry that I cannot say what the result may be. It is really a serious matter and it would certainly be discouraging to anybody else.

President.—Anybody else is not affected until after five years.

Mr. Peterson.—I am taking it purely from the profit and loss point of view. Supposing our present works profits are Rs. 150 lakhs and if you reduce the allowance for works expenditure by Rs. 60 lakhs, then the works profit comes down from Rs. 150 lakhs to Rs. 90 lakhs. That means that there is not enough money for depreciation and there is not enough money to carry through this development programme, and there is no money at all to pay to the shareholders.

Dr. Matthai.—Then in that case the alternative would be to give you protection for a short period.

Mr. Peterson.—That would be one alternative. I regard the first five years as much more vital to the industry than the last five. I would be quite prepared to take the risk of an average of the first five years. If you take the average present cost and the average figure for all the years—if you take the mean between these two—I should say we might be able to manage. But if you put it at the average of the ten years then for the first three or four years you put us in a dangerous position.

President.—The mean I was suggesting was the mean between the costs as they may be at the beginning and the cost at the end. That will give a higher mean than if I took the reduced cost for 1928-29. The figure that I was giving you yesterday was something like this. We took the reduction yesterday at Rs. 37 as from 1925-26 and, we will call it 1933-34 for the present. What I suggested was that, already between 1925-26 and August 1926 there had been a reduction of Rs. 16 in the case of rails. Therefore the works cost was reduced to Rs. 80. In the latter period it would be reduced to Rs. 59. That gives you an average of Rs. 70. That is the actual cost and I am making no reduction whatsoever on any estimate of works cost in 1927-28 or 1928-29 or anything at all. If I followed that principle, what happens is that up to 1927-28 the cost would go down by a further Rs. 5. At the end of this year your production would rise from 350,000 to 375,000 tons and then again from 375,000 to 420,000. Then this figure of Rs. 80 would be lower by about Rs. 10.

Mr. Peterson.—We are not going to make 70,000 tons more steel for an expenditure of Rs. 60 lakhs less yearly within 12 months. This is not possible.

Mr. Mather.—Mr. Ginwala's point is this, that an average based on actuals for August 1926 and at the end of the period is more favourable to you than an average based on an estimate of 1927-28. That average would be more unfavourable to you than the one Mr. Ginwala suggests.

President.—That is the more reason why I wish to avoid any estimate after August as to what your production would be until we come to the end of the period.

Mr. Peterson.—If you take the figure for August which is Rs. 80 a ton, and if you take a figure at the end of the period which is, say, Rs. 60 a ton, and took Rs. 70 as the fair cost, that is putting a very heavy strain on the industry for the first three or four years.

Dr. Matthai.—At a time when the industry would be less able to face the strain?

Mr. Peterson.—That is so. I reduced it to the profit and loss figure and then this point at once struck me.

President.—Supposing the cost was Rs. 70 can you give us your estimate of the works cost?

Mr. Peterson.—The total expenditure would be Rs. 350 lakhs. I have got the thing worked out (handed in).

President.—The Board has got to consider whether, if the protection was based on this figure for the works cost, at every stage the company would be in a position to show a good balance sheet and give you enough for depreciа-

tion and other charges that you have to meet including your development programme.

Mr. Peterson.—One error which one is likely to fall into is this that you may take a margin to provide for interest, depreciation, etc., and then you find the costs do not go down as rapidly as you expect and you will find the margin is short. That is what happened in the last enquiry.

President.—If we take care to see that at every stage it meets all the requirements of the industry, what more do you want?

Mr. Peterson.—I want nothing more. I simply wanted to point the matter out to you as it struck me and I wanted to have the point cleared up.

President.—I am glad you have again drawn our attention to that.

Mr. Peterson.—There is one other point I should like to make and that is an important point. I think the Board is under the impression that if protection is increased towards the end of the period, it would be an inducement to a new Company to come in. I have a good deal of experience of financiers and investors and I am perfectly certain that they would be very much more attracted by the actual results of this Company than by any prospect of increased protection.

President.—True; but in India, as you know, Companies are not floated by shareholders.

Mr. Peterson.—It is the financiers I am speaking of.

President.—They must have eyes to see whether the Tata Iron and Steel Company were already doing well and whether the costs were coming down.

Mr. Peterson.—They may say that if protection is given on too high a scale towards this end it may be reduced when the actual results are seen.

President.—That is another point.

Mr. Peterson.—That is what the financiers always say to me anyhow.

President.—If there is a certainty of protection for a particular period, then the financier or new comer looks at your results and says "under the scheme of protection in the first two years the Company has earned so much"; then he says let me see what further is to be expected and he looks at the figures.—"This is what the Tata Iron and Steel Company have stated could be done within this period. Let us see if we can do it. If we can do it we shall float a Company." The case here is not the same as in Europe or America. The financiers would come forward themselves and take the shares first and give them to the public afterwards.

Mr. Peterson.—That is exactly my point. That is why I say that if other Companies are to be induced to start they can only be attracted by our results.

President.—Is there anything else?

Mr. Peterson.—Nothing else.

Bazaar prices of British and Continental Steel.

President.—Before we go on to the statements, I would like to know whether in your office here you have got a list of bazaar prices for Continental and British steel.

Mr. Peterson.—I have got it here.

President.—I want bazaar prices and not your prices. I want them for Bombay and Calcutta. As far as I can judge from figures just now what happens is that Continental steel is being sold where there is no competition, at a price more or less just below the British price and I want to see whether this impression is correct.

Mr. Peterson.—I doubt whether that would be correct. Would you like a statement as regards Bombay and Calcutta prices?

President.—Yes.

Mr. Peterson.—For how long?

President.—Give it for a couple of years for every month.

Mr. Peterson.—It will take sometime to prepare.

President.—What figures have you got here?

Mr. Peterson.—I don't think I have anything ready in the form of a statement. We can give you a statement in three days.

President.—I want figures for 1924-25 and 1925-26.

Mr. Peterson.—Do you want figures for any other ports?

President.—The more the better.

Mr. Peterson.—Do you want the prices in places like Delhi, Cawnpore?

President.—Calcutta, Bombay and the ports.

Mr. Peterson.—Do you want the quotations for Continental prices or will our prices do?

President.—Where do you get your quotations from?

Mr. Peterson.—In Bombay I usually get quotations from Messrs. Mulji Hari Das.

President.—The Indian Iron Merchants Association have given us figures.

Mr. Peterson.—Their figures are just as accurate as can be had.

President.—There is nothing further to be got from Bombay?

Mr. Peterson.—Nothing.

President.—You have got the Calcutta iron and steel market reports.

Mr. Peterson.—You have also got the daily list of imports, but you can never be certain of the prices marked on invoices.

President.—Those are the prices at which steel is said to be selling in the bazaar.

Mr. Peterson.—You can never be sure.

President.—Mr. Anandji Haridas has given us the actual figures.

Mr. Peterson.—That is probably the best you could get.

President.—As regards other ports, have you got any information?

Mr. Peterson.—We have for Madras. I don't know whether we have for Karachi.

President.—Have you got for Rangoon?

Mr. Peterson.—I think we have for Rangoon, but the figures for Rangoon may not be for two years.

President.—I forgot to ask Mr. Sawday about seasonal prices. Can you give me any idea at about what time prices begin to rise for the ordinary bazaar material?

Mr. Peterson.—Do you mean at what time the demand begins to fall off? The demand for products falls off in the monsoon with the result that prices fall. If there is a good monsoon, the prices will then rise. That will probably go on until the end of May.

President.—The period of higher prices will be between November and May.

Mr. Peterson.—I would say after the Pujas. It would vary in each locality. The imports will also be affected.

President.—Consequently the prices may come down if the imports increase.

Mr. Peterson.—Yes.

Mr. Alexander.—Two years ago the prices dropped in the cold weather.

President.—I would be here for the next two or three days. I would like to have information on those points.

Mr. Peterson.—Yes.

President.—I would like to go through the statements and I would like to ask a few questions about the management at the other end, the managing agents and the Directors of the Steel Company. My view is that this is a national industry in which the people have a direct interest. The people are entitled to see that the management at both ends is as good as it ought to be.

Surplus pig iron.

President.—As regards the new statements, they begin with Supplementary Statement No. 71. I have nothing to ask about Statement Nos. 71, 72 and 73. As regards Statement No. 74 about surplus pig iron I take it you would have this surplus of 120,000 tons of pig iron right up to the time you reach your more or less full production, whilst the old units are working.

Mr. Peterson.—Yes, without the third duplex.

President.—Up to the stage when you begin to operate the third duplex you will have 120,000 tons without operating the Batelle furnace.

Mr. Alexander.—Without operating the fifth furnace, that is right. Once we start the third duplex, we will have to start the fifth furnace and until that production gets up to the full quantity the surplus will more or less approximate that.

President.—It will gradually go on decreasing, is that right?

Mr. Alexander.—Yes.

Mr. Mather.—Is that 120,000 tons on the assumption that the finished steel production is 400,000 to 410,000 tons?

Mr. Alexander.—400,000 tons.

Mr. Mathias.—In 1933 suppose you have only four furnaces blown in, would you have sufficient pig iron for the full production of steel?

Mr. Alexander.—Yes.

Mr. Mathias.—That is to say four furnaces would be able to meet your full requirements.

Mr. Alexander.—Yes, over 12 months.

President.—What you call surplus pig iron includes anything that is now for sale.

Mr. Alexander.—Yes.

President.—That includes part of the stock that you would normally require against contingencies.

Mr. Alexander.—We have got 75,000 tons anyhow.

President.—What I had rather in my mind was this. You remember in the first enquiry that the normal surplus we thought would be about 40,000 tons, that is to say, if you didn't have any extra furnaces working.

Mr. Alexander.—We took our pig iron at a much lower figure and we subsequently raised it. We know that we can make much more and we have done it.

President.—We will take 120,000 tons as the normal figure until the 3rd duplex is in full operation.

Mr. Alexander.—That is right.

Mr. Mathias.—And therefore with 4 furnaces only you can work up to the full production.

Mr. Alexander.—Yes up to the 400,000 to 420,000 tons.

Mr. Mathias.—You want to have five furnaces.

Mr. Alexander.—Yes.

Mr. Mathias.—It would not be possible to cut out one furnace.

Mr. Alexander.—No.

President.—What I wish to know is how much pig iron you would have after the duplex had been in full operation.

Mr. Peterson.—About 50,000 to 60,000 tons.

Mr. Mather.—That is estimating roughly 600 tons a day for C and D?

Mr. Alexander.—700 tons.

Mr. Mathias.—You could not give us any sort of estimate as to what would be the cash value of 120,000 tons?

Mr. Peterson.—We cannot say what the price is going to be after 10 years.

Mr. Mathias.—Can you give us any sort of estimate?

Mr. Peterson.—In America it is considered worth while blowing in a blast furnace if it is possible to make a dollar per ton profit on the iron.

Mr. Mathias.—How much is that in rupees?

Mr. Peterson.—Rs. 3.

Mr. Mathias.—Is that what you are going to make on the average?

Mr. Alexander.—That is what they do in America.

Mr. Mathias.—I am talking of Tatas and not America.

Mr. Alexander.—Last year we didn't make 10 cents on the iron exported. It depends on what Indian Iron and Steel Company does and what the Bengal Iron Company does.

President.—It is really difficult to estimate the price of pig iron.

Mr. Peterson.—Yes.

Mr. Mather.—At any rate for the next year or two there is no reason to expect any great change.

Mr. Peterson.—As soon as the new blast furnaces come in, the high price will disappear automatically.

President.—What do you estimate the difference as regards the 60,000 tons of pig iron which you would have in any case between the actual works cost and the average selling price assuming that steel took over the depreciation and other things.

Mr. Peterson.—We might expect to sell 40,000 tons quite easily on which we would get with the Indian price at Rs. 60 Rs. 24 a ton and on the balance which will be exported to Japan, America or elsewhere, we would get about Rs. 5 a ton.

President.—That is about Rs. 6 lakhs.

Mr. Peterson.—Yes.

Mr. Mathias.—How much of this 120,000 tons would be sold in India?

Mr. Peterson.—Not more than 40,000 tons.

Mr. Mathias.—Taking 40,000 tons as a constant factor . . . . . .

Mr. Peterson.—At present we cannot say. The market for pig iron in India may go up. The question of sleepers is not yet settled. That might make a difference. We used to estimate the Indian demand as 100,000 tons. Now we assume it as 80,000 tons.

Steel Sleepers.

President.—Supplementary Statement No. 75, gives the f.o.b. price of £7 a ton for sleepers. Should we take the same amount of freight for sleepers as we did in the case of rails?

Mr. Peterson.—Yes.

President.—I suppose that it would be about 16 to 17 shillings.

Mr. Peterson.—16 shillings.

President.—With 16 shillings for freight, Rs. 3 for landing charges and Rs. 14 for duty, it would work out to Rs. 120 or Rs. 121.

Mr. Peterson.—We have worked it out to Rs. 119 and some annas.

President.—Let us take it at Rs. 120.

Mr. Peterson.—Yes.

President.—The British price is £2-5-0 higher.

Mr. Peterson.—Yes. I don't see how the British works are going to give deliveries.

President.—That is why their quotation is high probably. As regards the Continental quotation . . . . . .

Mr. Peterson.—That is a genuine quotation.

Rail prices.

President.—As regards Supplementary Statement No. 77 about the Rail Syndicate, is the Metal Bulletin the British Bulletin?

Mr. Peterson.—Yes.

President.—The quotation of 668 francs is rather curious. It is equal to just about £4, and if it is the sale price of the Rail Syndicate, it means that so far as internal prices are concerned, they can accept any figure.

Mr. Peterson.—They are accepting a lower figure than the export price.

Mr. Mather.—Is it the European Rail Makers Association or is it the Syndicate of the French Rail Makers?

Mr. Peterson.—It is the Syndicate of the French Rail Makers. The International Rail Makers Association deals with export prices.

President.—Their minimum price is £6.

Mr. Peterson.—Yes, that is the price we have heard.

President.—It does not help us.

Mr. Peterson.—No.

Pig iron combine.

President.—As regards the pig iron combine—Supplementary Statement No. 78—it is really difficult to follow what the exact arrangement is. We shall take first of all the internal price.

Mr. Peterson.—In India?

President.—Yes, that is what we are really concerned with. Do you regulate it by the import price of pig iron, *plus* freight and other charges?

Mr. Peterson.—It is considerably lower at present.

President.—What I wish to know is how much below the c.i.f. landed price of pig iron is your price?

Mr. Peterson.—The c.i.f. landed price will be about Rs. 80 per ton. Our price is Rs. 60 for No. 4 and for No. 3 it is Rs. 62 f.o.r. works.

President.—Have you got any recent quotations for pig iron?

Mr. Peterson.—I think that when the price of Rs. 60 was fixed a year ago it was £3-17-6.

Mr. Mather.—That was f.o.b.?

Mr. Peterson.—Yes.

Dr. Matthai.—The c.i.f. price is the maximum limit above which your price cannot go.

Mr. Peterson.—Quite so.

Dr. Matthai.—It will always be below that.

Mr. Peterson.—It has been so.

President.—Can you tell me what your average Indian selling price is?

Mr. Peterson.—We have given you that information.

President.—Can you refer me to the page?

Mr. Peterson.—See page 70 of the Tariff Board's publication.

President.—Are these export f.o.b. prices?

Mr. Peterson.—F.o.r. Tatanagar.

President.—Have you got any recent quotation for pig iron from England?

Mr. Peterson.—Practically none is imported.

President.—Then, we must take the figure given in the Iron and Coal Trades Review.

Mr. Peterson.—That is the only way to do it.

President.—And then add freight, landing and other charges.

Mr. Peterson.—Yes. For pig iron, the freight is very low.

President.—I understand that you have got a pooling system.

Mr. Peterson.—We don't pool prices.

President.—You pool quantities.

Mr. Peterson.—Yes. The markets are divided between us. It is not so much a question of market as a question of the freight that is available.

President.—I mean in India?

Mr. Peterson.—In India we have agreed that we should divide the market.

President.—If you take the market as 100,000 tons, your share will be 40,000 tons.

Mr. Peterson.—Half and half.

President.—You take 50,000 tons and Messrs. Burn and Company and Martin and Company take 50,000 tons between them.

Mr. Peterson.—Yes. This year it was 40,000 tons for each.

President.—As regards the price do you fix a minimum or what do you do?

Mr. Peterson.—We fix a limit, but it does not actually work in practice. Recently we raised our price by Rs. 5 and people kept on buying from us.

President.—I suppose you make different grades of pig iron.

Mr. Peterson.—Yes. This price does not apply to basic pig iron. We sold the other day basic pig iron at Rs. 40 per ton.

President.—What is the difference between the price of basic pig iron and that of foundry pig iron in India?

Mr. Peterson.—The basic pig iron we regard as being outside the agreement, which covers all foundry pig iron. It is a matter of agreement that we should sell basic pig iron at a lower price.

President.—Does the Indian Iron and Steel Company make only foundry pig iron?

Mr. Peterson.—The Indian Iron and Steel Company makes also basic pig iron.

Dr. Matthai.—If there is a falling off in the Indian demand for export markets, there would be a reduction in the Indian price.

Mr. Peterson.—I don't think so. I think that there would be a reduction in the production, that is to say, we would blow out one or two furnaces. I would like to make one point here. We sell pig iron in Bombay at very much the same price as in Calcutta. In this case we can get a fair price as against the importer. We bear the freight which brings down our realised price.

President.—As regards export, I take it that most of it is basic pig iron.

Mr. Peterson.—Almost entirely basic pig iron.

President.—In that case do you sell at the world price or have you got any internal arrangement?

Mr. Peterson.—There is no internal arrangement. It is more a question of dividing up the available freight. Japan can take much more pig iron but only a certain amount of freight is available. If we competed against each other for the available freight, the freight would be put up against us; that was what happened in the past. Instead of doing that, we have agreed that in combination we should call for freight and thus we have brought down the freight.

President.—What is the freight to Japan for pig iron?

Mr. Peterson.—We sell through a Japanese firm. They get the freight for us. The present freight is about Rs. 12. We sell f.o.b. Calcutta. But the point is that if they cannot get the freight, they won't buy.

President.—The export price is Rs. 4 or Rs. 5 higher than f.o.r. Tatanagar.

Mr. Peterson.—Yes.

Dr. Matthai.—You pool the freight and you pool the local market but the prices adjust themselves.

Mr. Peterson.—Yes.

President.—As regards Japan, is there any duty on pig iron?

Mr. Peterson.—I think we sent information to the Board about that recently. They originally had a proposal to put on a duty which they ultimately gave up. But they gave a bounty instead, 1·7 *yen* per ton.

President.—That is just over Rs. 2. That is nothing and probably there is a revenue duty.

Mr. Peterson.—It is a completely open market in Japan. They rely on three sources, India, Manchuria and America.

President.—Then you say "We have provided that we shall have liberty to sell to our subsidiary for foundry work on the same lines as the Indian Iron and Steel Company and the Bengal Iron Company."

Mr. Peterson.—We have already proposals from two firms for putting up a large plant and going into the cast iron sleeper business and we have provided in the agreement that we shall be at liberty to sell to them at as low a price as the Indian Iron and Steel Company and the Bengal Iron Company sell to their own subsidiaries. That arose in connection with a complaint made by Messrs. Malan and Company.

President.—You can get out of the whole agreement by simply giving your subsidiaries all the pig iron.

Mr. Peterson.—Then the other people would have all the market; they won't complain then.

President.—Is there a big miscellaneous market apart from the big subsidiaries for pig iron?

Mr. Peterson.—Yes. There are a large number of small foundries and the railways.

Dr. Matthai.—Do the subsidiaries play a small part?

Mr. Peterson.—The Bengal Iron Company is a very large subsidiary. They have got a very big foundry and cast iron sleeper plant. We simply reserve the right as they have in their case.

Relining and rebuilding funds.

President.—We shall now take Statement No. 79 which deals with relining and rebuilding funds for 1925-26.

Mr. Mather.—This is an interesting statement because it shows what you call "Reserve in cost." The total of the cost sheet entries for 1925-26 is Rs. 45 lakhs and your actual expenses on those particular items comes to Rs. 34 lakhs, so that you show on your cost sheets an excess of Rs. 11 lakhs. You have reduced these items for this year?

President.—I think you said that in giving the future estimate you had made allowance for that?

Mr. Alexander.—Yes.

Mr. Mather.—That is one point where there is a reduction of Rs. 3 per ton from the 1925-26 cost sheets.

President.—That has already gone into the other statement, Statement 83, has it not?

Mr. Alexander.—Yes.

Depreciation, Working Capital and Debentures.

President.—Let us take Statement No. 84 "Depreciation, Working Capital and Debentures."

Mr. Peterson.—That is simply extracted from the balance sheet.

President.—I take it that this block value that you have given is the written down block value?

Mr. Peterson.—Yes.

President.—And you wrote it down practically, I think, with the depreciation that you had written down before. Is that right?

Mr. Peterson.—Yes.

President.—I think the substantial improvement that you have really made comes in these loans and debentures where you have reduced your liabilities from Rs. 546 lakhs to Rs. 443 lakhs.

Mr. Peterson.—That is right.

President.—I take it that this has been partly reduced by the transfer of certain sums from the depreciation fund?

Mr. Peterson.—That is correct. The profits of the Company have reduced the loans.

President.—What does your depreciation fund now show to its credit? There may be no objection to your temporarily using it for other purpcses if you can put it back.

Mr. Peterson.—What we are doing now is that we are showing it on the asset side of the balance sheet and writing down the block each year. We do not carry a separate depreciation fund now as we used to up to 1922 on the liability side. From 1922 we changed the system and we write down each year the amount of depreciation taken.

President.—If there was any proposal which would lay a statutory obligation on your part to keep a depreciation fund, you would have to maintain a separate fund.

Mr. Peterson.—Then we could go back to the old system.

President.—Supposing some control was introduced, would it not be necessary to keep a separate account? Supposing you lent the money to the working capital from the depreciation fund, then would you credit the interest to the depreciation fund and debit it to the capital account? Would that be difficult?

Mr. Peterson.—No, it would not be difficult.

President.—In fact I have seen it done by some companies. Of course there will have to be a different fund.

Mr. Peterson.—You can credit it to a separate fund like the provident fund.

Mr. Mathias.—Do you keep your accounts in that way?

Mr. Peterson.—At present no.

The utilization of slag.

President.—Then we come to Statement No. 85. There are two interesting points which I should like to ask you about, namely this utilization of the slag in the manufacture of cement and fertilizer. So far as you are concerned you have not made any attempt to do it, have you?

Mr. Peterson.—We can make cement out of it, but there are already so many large cement factories in India which cannot dispose of their production that we do not think it would be profitable.

President.—If you get the same freight advantage as you get in steel?

Mr. Peterson.—I do not think we would get it. It is only a by-product.

President.—You are very close to some of the markets. You are not very far off from Calcutta and there is a very big market there.

Mr. Peterson.—The actual crushing of the slag makes it costly and it has no particular advantage over stone.

President.—You have thousands of tons of slag. It is worthwhile investigating it.

Mr. Peterson.—We had it investigated by the Indian Cement Company We went into it very thoroughly. We can give you the results of our investigations, if you want them. There has recently been a great slump

in the cement trade. India produces more cement than it can consume and about that time 3 large cement companies went into liquidation.

President.—In the case of cement the main difficulty was freight and it acted in two different ways—*viz.*, the freight on coal and the freight on cement itself. As regards coal it seems to me that you are more favourably situated than any Cement Company just now. The nearest is the Sone Valley Cement Company and you are much nearer and, what is more, you will be using a waste product.

Mr. Peterson.—We have to bring the other raw material from a considerable distance.

President.—We went fully into the question. The main thing is limestone. In place of limestone you could use a good deal of slag.

Mr. Peterson.—I know we investigated the case very fully and we came to the conclusion that there was no advantage in putting up a cement works, and no profit to be made. It is not a very good time to go ahead with one.

President.—Cement is quoted at a nominal price of Rs. 55 a ton at the ports. It is probably Rs. 5 higher than you could get it for.

Mr. Peterson.—You can buy it for less than that. They have a system of pooling markets.

President.—I don't know what the arrangement is. I think it would be regulated by the price of imported cement.

Mr. Peterson.—The production has gone up so much that the imported price doesn't govern the price of Indian cement.

President.—It seems to me that it would be an advantage if you make further investigation into the question.

Mr. Peterson.—We had put it aside for over two years. Until the cement position in India is more or less straightened up, it is not a profitable business.

President.—Then as regards fertilisers. . . .

Mr. Alexander.—It is not high enough in phosphorous.

President.—It is not a practical proposition.

Mr. Alexander.—No.

Mr. Peterson.—We have had experiments made through the Agricultural Departments. There were no results at all. In some case they thought that it improved the crops, but they were not sure. Somebody asked about it from Delhi the other day.

Supplementary Statement No. 87.

President.—As regards supplementary Statement No. 87, I would like you to give me, Mr. Alexander, as approximate an estimate as you can of the different sections—light structurals and heavy structurals—that you roll in the form of angles, channels, tees. It is rather important.

Mr. Alexander.—Yes, it can be prepared in the sales office.

President.—I want the quantities. The question arises in this way. If you take the average works cost and if you make channels, tees and some other products, whose costs will be 10 per cent. more, I should like to see what difference it is going to make in the case of heavy structurals.

Mr. Peterson.—Do you want to group it into sections?

President.—I take it that in the case of heavy structurals there won't be much difference in the works cost in the same mill, but in the other there will be. Divide it as far as you can and say under angles so much difference and so on.

Mr. Mather.—It is not needed for each particular size but for each particular product. 28″ mill structurals so many thousand tons, light structurals so many thousand tons, each divided into beams, channels, angles, etc.

Mr. Alexander.—Yes.

Ruling No. 6 of 1926 of the Central Board of Revenue.

President.—As regards ruling No. 6 of 1926 of the Central Board of Revenue to which you refer you say that the effect of that ruling is that if any bars are made to British standard specifications—it doesn't matter in what country—then in that case they would be liable to an *ad valorem* duty of 10 per cent., that is to say on present prices it is equal to about Rs. 12, whereas under the protective duty, it would be liable to Rs. 40 a ton and your contention is that that gives the Continental steel made to British standard specification an advantage of Rs. 25 a ton.

Mr. Peterson.—Yes.

President.—The mere fact of that being made according to British standard specification.

Mr. Peterson.—Yes, according to that ruling.

The Management of the Tata Iron and Steel Company.

President.—I wish to ask a few questions about the two directorates. I shall first deal with the managing agents. I regard this industry as of very great importance to the country and this I told you also in the first enquiry. It is essential it should have as good a management at both ends as possible. I take it that one function of the firm of managing agents is to look after the finances of the Company.

Mr. Peterson.—Generally speaking, they are responsible for the entire management of the Company subject to the control of the Board of Directors.

President.—In the firm of managing agents how many are effective members, that is excluding minors and others?

Mr. Peterson.—There are no minors. The actual firm of managing agents consists of certain Directors one of whom is since dead. You want a list of the Directors.

President.—How many of them are there at present altogether?

Mr. Peterson.—At present eight.

President.—Do they all work?

Mr. Peterson.—Yes. The Managing Agents' firm has a large number of activities.

President.—Will you please give me the names?

Mr. Peterson.—The actual Directors of Tata Sons Ltd. are:—

Sir Dorab Tata.

Lady Ratan Tata.

Mr. N. B. Saklatwala.

Mr. J. D. Ghandy.

Mr. F. M. Kanga.

Mr. B. J. Padshah.

Mr. H. P. Gibbs and myself.

President.—How many Companies are you managing? Let us take them department by department. You have got the Steel Company.

Mr. Peterson.—The main departments will be the Steel Company, the Hydro-electric Companies and the Cotton Mills.

President.—There are three Hydro-electric Companies.

Mr. Peterson.—There are four Companies. If you want this information, in detail I can send it in.

President.—You have also got textile mills.

Mr. Peterson.—Yes, cotton mills.

President.—Besides that you have the Tata Construction Company.

Mr. Peterson.—No. We are not Agents for that.

President.—Are there any other departments?

Mr. Peterson.—The Tata oil mills, the cement companies, the Indian Hotels and some miscellaneous things.

President.—You have got branches in other parts of the world.

Mr. Peterson.—No, the only branch of the firm is in Calcutta. There is an allied firm in London. It is not a branch of the firm.

President.—Of these Directors, who is in charge of the steel works?

Mr. Peterson.—I am in charge of the steel works. I am not a Director of the Company but of the Managing Agents' Firm.

President.—Your Head Quarters are usually in Bombay.

Mr. Peterson.—Yes.

President.—Besides the work of the Steel Company, do you have to look after other companies?

Mr. Peterson.—I have no other work except that I am a Director of two other Companies.

President.—That has been so since when?

Mr. Peterson.—Since October 1924.

President.—Do the other Directors take an active part in steel?

Mr. Peterson.—Yes.

President.—I just want to understand your system.

Mr. Peterson.—All the Directors in charge of the various departments meet every morning and each Director would bring before the entire body of agents any particular question he had to refer, any matter on which he thinks it is possible that the firm might differ from his opinion or on which he wants advice. We would not put the matter before the Board of the Companies until we were all in general agreement.

President.—It is obvious that the Board of Directors cannot interfere on every occasion with the technical man on the spot. I wish to understand in what way you direct the technical management at this end.

Mr. Peterson.—By watching returns. We do not attempt to interfere with the technical manager's work except on important questions of policy.

President.—Having got the returns, do you interpret them yourself or do you have any expert to advise you at the other end to see whether any general economies would be possible which you would put to the technical management at this end?

Mr. Peterson.—There is no expert in Bombay. We have Consulting Engineers retained in England and America who advise us.

President.—Except yourself now there is no Director on the Board who is quite familiar with the details of steel manufacture.

Mr. Peterson.—We would not have anybody who would be very familiar with the actual process of steel manufacture.

President.—Don't you think it is essential?

Mr. Peterson.—It would be a disadvantage, I think.

President.—I think that if you have a man there who can understand the figures sent from Jamshedpur better, you might carry out economies in certain directions. I don't say that Mr. Alexander does not look after the works. I think that it is always better to have an outside point of view.

Mr. Peterson.—I think we get that on a general question of policy which is really the important matter for the Board. Take the question that has been exercising our attention for the last six months, namely the development programme. Mr. Alexander made some proposals two years ago. These proposals to a certain extent were altered as a result of opinions we had from other experts. They were discussed at great length in Bombay. Then, I came across here and discussed them with Mr. Alexander and we both agreed on the final programme.

President.—I have never known of a big management where at both ends they had no experts to advise them. It happens even in Government departments where things are not done on business lines. You cannot expect the Railway Board to direct the policy of the railways without expert advice at the other end. I don't want the expert at the other end to meddle with anything that has been done here. But for the information of the Directors, is it not essential to have somebody to explain to them what these figures mean?

Mr. Peterson.—I don't think so. The actual results which are the important thing can be easily understood.

President.—In what other way are you to understand how you are doing?

Dr. Matthai.—Is it not the usual practice for employees of the Agency firm to be lent to the works they are managing and *vice versâ*?

Mr. Peterson.—The Managing Agency system is in operation in this country because of the difficulty in getting finance.

Dr. Matthai.—Partly that and partly administration!

President.—Mr. Alexander has experience of the works. It may be an advantage to have him in Bombay, for instance, instead of letting him retire.

Mr. Peterson.—It may be more advantageous to have him at Jamshedpur. Moreover, it depends very much on the personality of the person selected. One expert might make a good administrator and another expert might make a bad administrator. I have seen in actual practice not only here but in Government departments also that the expert does not very often make a good administrator. The business of the Bombay Office is to draw the attention of the management here to the possibility of directing their manufacturing capacity towards the best possible commercial results, to direct scales, and administration generally.

President.—I know a little about these matters too. It is always an advantage to consult an expert, though not to follow his opinion always.

Mr. Peterson.—If you want the actual past history of this company I can give it to you. An expert was brought out especially for the Bombay Office before I was there, but the result was I understand disastrous. I don't say that my opinion is right or that your opinion is wrong.

President.—It depends on the use you make of the expert.

Mr. Peterson.—What happened was that the General Manager resigned within two months. That does not really improve the management of the Steel Works.

President.—I will put it to you this way. This is my view. I don't feel that the Board of Directors are sufficiently in touch—I am talking of the Board of Directors as a whole—with this end and that it must, in the long run, affect the commercial aspect.

Mr. Peterson.—Do you think that the Board of Directors can, by the constant advice of an expert, become experts themselves from a technical point of view? It is impossible.

President.—On the Board, they may have a man.

Mr. Peterson.—They may either follow the advice of the man on the Board or follow the advice of the expert here—either the one or the other.

President.—I don't wish to make any personal remarks about anybody. Speaking as a layman this end is at a very great disadvantage if the Board of Directors are not able to guide them as regards costs, management, and so on.

Mr. Peterson.—I am afraid that the Board of Directors will not have that knowledge as to processes and costs from the technical aspect for a long time.

President.—It is very seldom that a technical expert objects to any advice given to him on general lines.

Mr. Peterson.—I can only submit that the history of this Company does not show that.

May I explain the system that is in vogue in Bombay. The Bombay Office receives copies of letters issued from Jamshedpur, cost sheets and everything. These are tabulated and the results are compared with former results and any other results that can be obtained. They are also sent to New York and London and advice is taken on them if necessary and the several opinions considered. All important questions of policy are taken before the Board for their decision every week. Before they are taken to the Board of Directors, they are discussed by the Board of the Managing Agents' firm. The Steel Company's Board usually meet once a week and so once a week all important questions are taken before the Board which require their sanction. In order that the Directors may be informed of the nature of the subject they have to deal with, a circular is usually sent round to each Director stating what has to be decided, the reasons why the Managing Agents recommend a certain course, why they agree or differ with the management at the works, giving the Board as much information as can be given. The matter is then discussed by the Board and decided by a resolution of the Board. That is the system we follow in important matters.

President.—I am afraid you follow somewhat the Government procedure of doing business by office notes.

Mr. Peterson.—No big business can be handled without collecting and circulating information.

President.—That is precisely the Government method.

Mr. Peterson.—You may perhaps think that I introduced this method. I did not. I merely continued the method that was in force.

President.—You have also been in Government service.

Mr. Peterson.—Yes, but this is not exactly the Government method of dealing with business.

President.—Is it any different from the office notes beginning from the Superintendent onwards?

Mr. Peterson.—We have none of that office noting.

President.—You just now told me so.

Mr. Peterson.—I said that a circular was sent to the Directors. The mass of papers is such that they could not read them and therefore before the Board meet, they are informed of the points at issue.

President.—There should be some Director there who is able to understand what is going on by reading the figures and statements.

Mr. Peterson.—Some Director of the Board you mean, but why?

President.—It is essential for him to understand the business.

Mr. Peterson.—I don't quite follow. The Managing Agents are in charge of the works. There is a Director in the Managing Agents' firm who receives all these letters, etc. Do you mean that there must also be a member of the Board of Directors who does all this?

President.—Yes.

Mr. Peterson.—No Director of the Board would agree to do that. He has not got the time.

President.—It may be nice to have a big man as a Director but it may be convenient to have some smaller man to attend to the business of the Steel Company. I know most of the Directors and they are very big men in their own way that is not the point. Along with big men, there must be somebody who must have the time, energy and the ambition to know what a big national industry is doing in the country and that is what is lacking now.

Mr. Peterson.—You propose, so far as I can see, that the Board of Directors should have a particular Director to devote more time to the affairs of the Steel Company.

President.—One, two or three—as many as can be found, who are qualified by general knowledge and experience to be able to understand what is being done in the country. The Board at present contains very big men. I have the greatest respect for all of them and I have nothing to say against them. What happens is that the Board of Directors have not got the time to look into the affairs of the Steel Company.

Mr. Peterson.—They have time to consider really important questions.

President.—It really takes a lot of time to understand the questions connected with the Steel industry.

Mr. Peterson.—I don't think that you are aware of the amount of work that the Board does. Some of the questions are discussed by the Board perhaps in ten consecutive meetings.

President.—It is very difficult for anybody to know anything about steel if he is not familiar with the works and he cannot get to know the works unless he visits the works pretty frequently.

Mr. Peterson.—Besides steel there are many other things.

President.—Take this Board. It is not a technical body, except for Mr. Mather, and we have been doing nothing practically for the last three years except studying the manufacture of steel in this country, and I think it is essential that somebody in the Board of Directors of the Steel Company must do the same thing. My point is that something more should be done than has been done in this direction. What is the sort of control that the Directors have over the Managing Agents?

Mr. Peterson.—The Managing Agents have power to sanction expenditure up to Rs. 1,000, that is expenditure not connected with the operations: they have also certain power to make appointments, give promotion. In the case of certain senior officials their appointment or promotion must go to the Board. There is the usual financial control. The questions referred to the Board are big questions of policy. For instance questions as to the price at which coal should be bought or sold would go to the Board: quotations for large contracts would go to the Board: questions as to the price to be quoted for rails, etc., would go to the Board.

President.—Would they have all the requisite information on these points to enable them to advise you?

Mr. Peterson.—They will have all the information we have.

Dr. Matthai.—Is there at present anybody in the head office with actual experience of what is done here?

Mr. Peterson.—There are several. Several have been here for a short time. We have no technical men, but men with experience of general work, sales and that kind of thing, there are.

Dr. Matthai.—Are you training any Indians to learn the management of steel works?

Mr. Peterson.—Indians in the works are being trained.

Dr. Matthai.—Are they definitely being trained for that purpose?

Mr. Peterson.—Eventually they may reach that. There are several of them under training now.

Dr. Matthai.—These men that you are training in the Technical Institute, are definitely trained for the technical part of the work. Have you any people recruited for the general administration side of the works?

Mr. Peterson.—General administration here means also the technical administration. The ordinary career of the manager of a works of this size would begin as superintendent of a particular department or as assistant superintendent, say, in the blast furnace or the rolling mills; then he would be put in charge of two or three departments and ultimately become manager. We have many people at present occupying the position of assistant superintendent and some occupying the position of superintendent who will come on if they develop.

President.—You have not got here in this country the system at all where in the Board of Directors there are one or two directors who are wholetime paid directors?

Mr. Peterson.—No. I do not think it would be possible.

President.—Because there would be constant friction between the Managing Agents and the Directors?

Mr. Peterson.—I think the Managing Agents must under their agreement be responsible for the management of the company.

Dr. Matthai.—You have a few Indians now who are doing responsible administrative work who did not start in technical positions in the works?

Mr. Peterson.—I do not know of any. I would like to point out there are all these difficulties in industrial organization in this country, and I am afraid we would not get over them in less than 10 or 15 years.

Dr. Matthai.—Quite true, but I would look upon a protected industry somewhat different from other industries in this respect?

Mr. Peterson.—There are some difficulties which you do not quite realize.

President.—We have no experience of the Board of Directors in that sense.

The sale of electricity to the Tinplate Company.

Mr. Mather.—I notice that the Tinplate Company's evidence gives the amount of electricity they purchase from you and the price paid. That works out for the first five months of this year at about Rs. 50,000 a month. If that amount is maintained throughout your receipt from this source would be Rs. 6 lakhs this year. Does that appear anywhere as a reduction in the cost of electricity or does that go into the general fund of the Company?

Mr. Peterson.—It will appear in the works costs.

Mr. Alexander.—It would be credited against the operating cost and then what is left would be distributed, to the various departments.

President.—The Board is very much indebted to you for the consistent courtesy that you have shown and for the willingness with which you have given us all the information at every stage. But for your co-operation I do not think we should have been able to get all the valuable data on which our Report is to be based and if we have had occasion to criticise you we hope you have taken it merely as part of the day's work.

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